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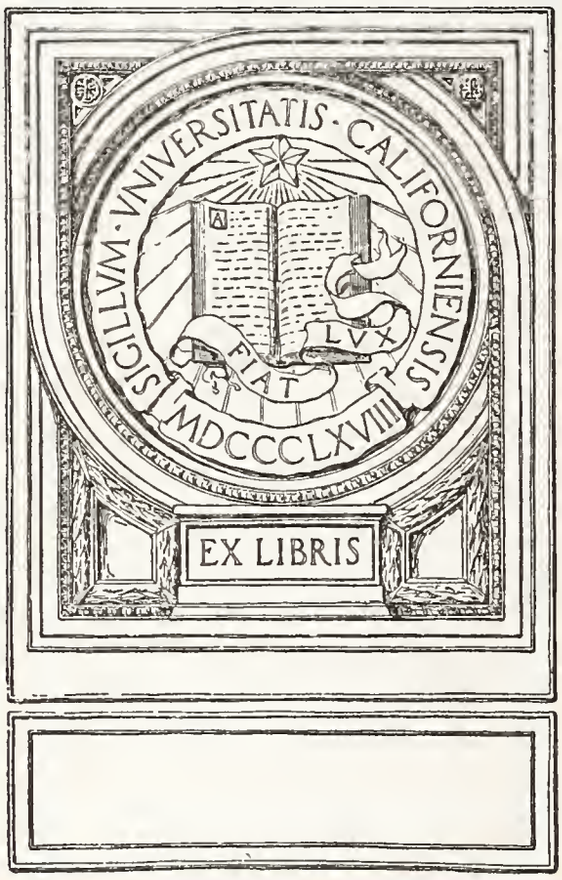

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Editors

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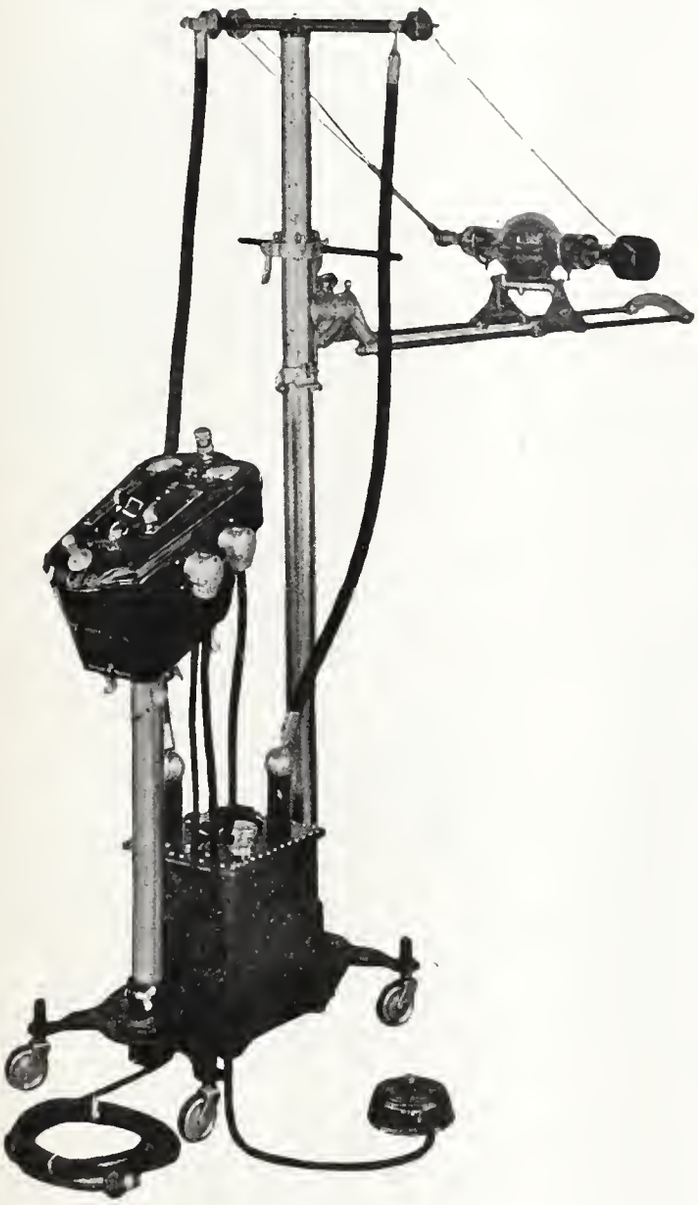

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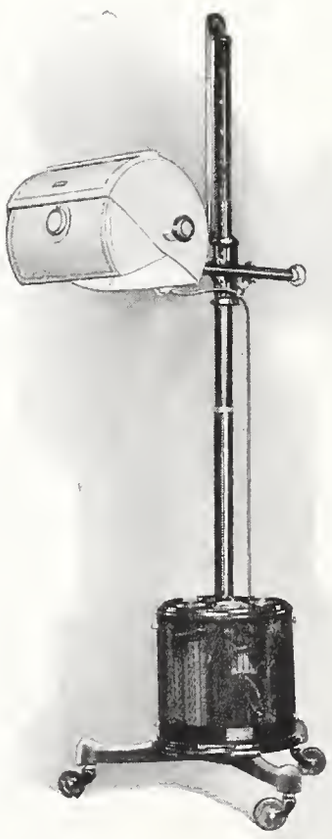

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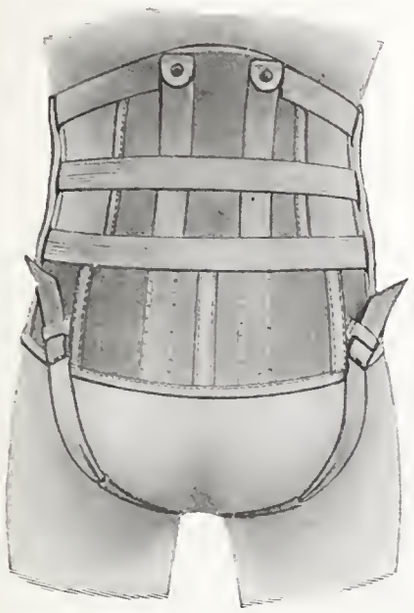

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BOOK REVIEWS

Personal Hygiene for Women. By Clelia Duel Mosher. Pp. 97. Stanford University: Stanford University Press, 1927.

A small book of useful information about everyday hygienic living, the precepts of which have been proved through the observations of many years in a college community. Undoubtedly, much of the traditional folklore of womankind is dissipated by the book. The value of the book in directing the personal hygiene of the young woman or girl is obvious, although not many of them will be greatly interested in the feminist contentions of an earlier day concerning relative comparisons of muscular and mental development of male versus female. Not many women will agree that the male attire of today is cheaper, more comfortable and more hygienic than that of the average modern woman.

Doctor Mosher's criticism of modern shoes and deformities of feet is well taken. It opens a fertile field for reform and education.

Clinical Case-Taking. Supplement to methods in medicine. By George R. Hermann. Pp. 90. Illustrated. St. Louis: C. V. Mosby Company, 1927.

This small book, designed to guide the students of Tulane University, where Doctor Hermann is assistant professor of medicine, gives a very complete and detailed outline of history taking, physical examination, laboratory work, and progress notes. The introduction, stressing the value of complete records, and the technique of obtaining them, is noteworthy, as is also the prominence given to the social history and environment, particularly in regard to the type of case. Family history and past history is also considered in the light of presenting complaint or types of disease assumed to be present.

There are curious hiatuses, as under "Backache," instead of giving a list of associated factors or types of pain, we have only "some common causes of backache."

Indeed it may be doubted whether combining a method of case-taking with a list of differential diagnoses, as is done for many items of both present illness and of status, is useful.

Occasional items seem quite misleading—e. g., under dyspnea it is stated that in aortic disease dyspnea usually occurs only in later stages after cardiac failure, no note being made of the characteristic nocturnal dyspnea of early aortitis.

As hospitals everywhere adopt more complete systems of recording cases, great variation in the outlines provided to guide the personnel is to be expected. Each chief of service and each practitioner will have his own plan, and while we may get many useful hints from the outlines used in other hospitals, such as this one of Hermann's, it is unlikely, as well as undesirable, that any one outline will find wide acceptance.

Management of the Sick Infant. By Langley Porter and William E. Carter. Third revised edition. St. Louis: C. V. Mosby Company, 1927.

It is hardly necessary to make a complete review of the third edition of Porter and Carter's "Management of the Sick Infant," since the appearance of the book in 1922 made such a stir in professional circles. It is generally used now by most practicing physicians as a standard in the realm of pediatrics. However, we have reviewed the book very thoroughly to be sure that the latest and most modern discoveries have been intended.

Our conclusion is that the book can still be looked upon as an authority in the field it covers. The most valuable and fascinating part is the chapter on methods. These simple, commonplace procedures are so vividly and minutely described, both by word and picture, that the general practitioner may feel confident to supervise the care of the most seriously ill of his little patients.

Much more valuable too, than one would guess on casual observation, is the space devoted to prescriptions. These are the results of a boundless experience, consequently the drugs used are those which have proved their worth. A fact which deserves no slight consideration is the appetizing way the authors have of dispensing the most disagreeable of drugs.

To read the book is a joy because of the easy and fascinating style of the authors, but besides that, one feels continually that the subject has been handled in the most comprehensive way and that the reader is reaping the benefit of the vast experience of the authors.

Textbook on Embryology. By H. E. Jordan and J. E. Kindred. New York: D. Appleton and Company, 1926.

The reviewer feels that Jordan and Kindred's Embryology, published by D. Appleton and Company is a good deal the finest of the short text and reference books that have come to his attention the past year. It seems to be written with the practicing medical man distinctly in mind. Much of the detail of lower vertebral embryology has been omitted and much that concerns human development inserted.

There is great clearness in the numerous illustrations. The chapter on gastro-intestinal embryology is particularly interesting and instructive. In fact, their treatment of the subject in systems seems to me preferable to any other.

The language is clear-cut, making a rather obscure subject exceedingly interesting and understandable.

(Continued on Page 12)

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BOOK REVIEWS

(Continued from Page 11)

How to Make the Periodic Health Examination. A Manual of Procedure. By Eugene Lyman Fisk and J. Ramser Crawford. Pp. 393. Illustrated. New York: The Macmillan Company, 1927.

This excellent book is well worth reading in detail, for all of its subject-matter is important. It deals with a type of medical examination with which it is the duty, and should be the pleasure, of every medical man, whether general practitioner or specialist, to familiarize himself. The one reluctant criticism is that the instructions are too long and too involved. To put it another way, the book is rather overspecialized, each specialist writing in it being unwilling or unable to cut down his subject-matter. One must realize, however, that to make the work of periodic health examination at all effectual the examination must be painstaking and searching, for it is the small defects and abnormalities that must be uncovered and corrected. Hence the phrase reluctant criticism. It all comes down to the question of doing the thing right or not attempting it at all. The book could be made one's ideal, but in practice one may see fit to cut just a few corners.

BOOKS RECEIVED

Nerve Tracts of the Brain and Cord. By William Keiller, F. R. C. S., Ed. Review copy by courtesy of the publishers, The Macmillan Company, New York.

Clinical Laboratory Procedures. By George L. Rohdenburg, M. D. Review copy by courtesy of the publishers, The Macmillan Company, New York.

International Clinics. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment. Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene, and other topics of interest to students and practitioners. By leading members of the medical profession throughout the world. Edited by Henry W. Cattell, A. M., M. D. Vol. IV. Thirty-seventh Series, 1927. Review copy by courtesy of the publishers, J. B. Lippincott Company, Philadelphia.

The Endocrines in General Medicine. By W. Langdon Brown, M. A., M. D. Review copy by courtesy of the publishers, Paul B. Hoeber, Inc., New York.

The Italian League Against Cancer—The Italian Government has recently taken a step which will be of interest to all who are working for the control of cancer and are studying the efforts which are being made toward this end throughout the world. At a meeting of the Italian League Against Cancer, there was made public a letter from the government endorsing the league and its aims and offering it substantial aid. "The government of Rome," the letter said, "will not, cannot, and should not hold itself aloof from labors directed toward so humane an end, and while it is unable to contribute very great sums of money, it will give its unconditional support, both practical and moral, to the campaign against the terrible scourge."

In brief, the government has decided: (1) to become enrolled in the Italian League Against Cancer; (2) to establish a special cancer clinic in the central dispensary; (3) to put at the disposal of the clinic the whole organization of the central dispensary; (4) to invite the Department of Hygiene and Public Health to name a physician to head the technical organization of the clinic; (5) to appoint a medical body of trained specialists whose services can be utilized in and outside of the clinic.

The chief functions of the clinic are: (1) to diagnose cases of cancer as early as possible; (2) to establish a center of activity for the dissemination of information; (3) to collect statistical data; and (4) to secure the hospitalization of indigent, inoperable patients.—American Society for the Control of Cancer.

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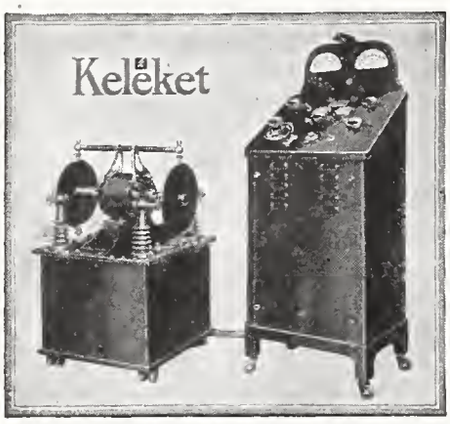

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TRUTH ABOUT MEDICINES

New and Nonofficial Remedies

(Abstracts from reports of Council on Pharmacy and Chemistry, A. M. A.)

Note.—These do not represent all of the actions of the Council, but they do represent those remedies manufactured by firms who cooperate with California and Western Medicine in its advertising columns, and thereby with the physicians in California.

In addition to the articles previously enumerated, the following have been accepted:

Scarlet Fever Streptococcus Toxin (Squibb)—This product (New and Nonofficial Remedies, 1927, p. 375), is now marketed in packages of five vials of toxin containing, respectively, 500, 2000, 8000, 25,000 and 60,000 skin test doses; in packages of fifty vials of toxin, ten containing 500 skin test doses, ten containing 2000 skin test doses, ten containing 8000 skin test doses, ten containing 25,000 skin test doses, and ten containing 60,000 skin test doses. E. R. Squibb & Sons, New York.

Ephedrin Sulphate (P. D. & Co.)—A brand of ephedrin sulphate—N. N. R. For a discussion of the actions, uses and dosage of ephedrin sulphate, see *The Journal A. M. A.,* March 19, 1927, p. 925. Parke, Davis & Co., Detroit.—*Jour. A. M. A.,* November 12, 1927, p. 1693.

Ephedrin (Lilly)—A brand of ephedrin—N. N. R. It is supplied in the form of Inhalant Ephedrin Compound (Lilly), containing ephedrin (Lilly), 1 per cent (by weight) in a liquid composed of menthol, 0.66 gm.; camphor, 0.66 gm.; oil of thyme, 0.31 cc.; liquid petrolatum to make 100 cc. Eli Lilly & Co., Indianapolis.

Pollen Extracts (Cutter)—(New and Nonofficial Remedies, 1927, p. 34; *The Journal A. M. A.,* June 11, 1927, p. 1891)—Also marketed in single vial packages containing 5 cc. of a 1:100 solution. Cutter Laboratory, Berkeley, California.

Pollen Extracts Concentrated (Cutter)—Liquid obtained by extracting the dried pollen of plants with a liquid consisting of 67 per cent of glycerin and 33 per cent of a buffered saline solution. For a discussion of the actions, uses, and dosage, see Allergic Protein Preparations, New and Nonofficial Remedies, 1927, p. 23. The following pollen extracts concentrated (Cutter) are marketed in single vial packages containing 5 cc.: Alkali Weed Pollen Extract Concentrated (Cutter); Allscale Pollen Extract Concentrated (Cutter); Annual Saltbush Pollen Extract Concentrated (Cutter); Arizona Ash Pollen Extract Concentrated (Cutter); Bermuda Grass Pollen Extract Concentrated (Cutter); Black Walnut Pollen Extract Concentrated (Cutter); Box Elder Pollen Extract Concentrated (Cutter); Burning Bush Pollen Extract Concentrated (Cutter); Canary Grass Pollen Extract Concentrated (Cutter); Careless Weed Pollen Extract Concentrated (Cutter); Coast Sagebrush Pollen Extract Concentrated (Cutter); Cocklebur Pollen Extract Concentrated (Cutter); Common Ragweed Pollen Extract Concentrated (Cutter); Corn Pollen Extract Concentrated (Cutter); Cottonwood Pollen Extract Concentrated (Cutter); False Ragweed Pollen Extract Concentrated (Cutter); Foxtail Grass Pollen Extract Concentrated (Cutter); Giant Ragweed Pollen Extract Concentrated (Cutter); Johnson Grass Pollen Extract Concentrated (Cutter); June Grass Pollen Extract Concentrated (Cutter); Lamb's Quarters Pollen Extract Concentrated (Cutter); Marsh Elder Pollen Extract Concentrated (Cutter); Mountain Cedar Pollen Extract Concentrated (Cutter); Mugwort Pollen Extract Concentrated (Cutter); Oak Pollen Extract Concentrated (Cutter); Olive Pollen Extract Concentrated (Cutter); Orchard Grass Pollen Extract Concentrated (Cutter); Plantain Pollen Extract Concentrated (Cutter); Red Root Pigweed Pollen Extract Concentrated (Cutter); Red Top Pollen Extract Concentrated (Cutter); Russian Thistle Pollen Extract Con-

(Continued on Page 16)

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TRUTH ABOUT MEDICINES

(Continued from Page 14)

centrated (Cutter); Rye Grass Pollen Extract Concentrated (Cutter); Sagebrush Pollen Extract Concentrated (Cutter); Shad Scale Pollen Extract Concentrated (Cutter); Timothy Pollen Extract Concentrated (Cutter); Tumbleweed Pollen Extract Concentrated (Cutter); Velvet Grass Pollen Extract Concentrated (Cutter); Western Ragweed Pollen Extract Concentrated (Cutter); Western Waterhemp Pollen Extract Concentrated (Cutter); Wild Oat Pollen Extract Concentrated (Cutter); Yellow Dock Pollen Extract Concentrated (Cutter). Cutter Laboratory, Berkeley, California.—*Jour. A. M. A.,* November 26, 1927, p. 1873.

PROPAGANDA FOR REFORM

Blueberry Leaf Extract—The Council on Pharmacy and Chemistry publishes a preliminary report on a blueberry leaf extract which has been proposed for use in the treatment of diabetes. A report on this product was read at the last meeting of the American Medical Association by F. M. Allen, who had continued the work begun in Germany by Wagner and others. The product used by Allen was made by E. R. Squibb & Sons; it is not being marketed and will not be offered to physicians in general until its usefulness has been demonstrated. The Council published its preliminary report to call attention to the possible usefulness of the blueberry leaf extract used by Allen. At the same time the Council points out that thus far no standards have been developed which will insure a uniform product; that the actual value of the product in the treatment of diabetes has not yet been proved; and that such proof must come from workers who have the necessary clinical opportunities and laboratory facilities on which to base judgment.—*Jour. A. M. A.,* November 5, 1927, p. 1607.

Introducing New Drugs—The report on blueberry leaf extract which the Council on Pharmacy and Chemistry publishes illustrates the praiseworthy and increasing tendency on the part of the large pharmaceutic firms to adopt the ideal method of introducing a new drug, namely, demonstration of the drug's chemical identity and uniformity; report of animal experiments giving promise of therapeutic value; report of clinical trials under the auspices of the discoverer; and provision for confirmatory study of the drug's therapeutic worth by independent investigation. What a contrast to the unscientific and haphazard flooding of the market with new and untried drugs that formerly obtained here and still obtains abroad! The change has arisen from the increasingly critical attitude of the American medical profession. This, it seems reasonable to believe, is due to the faithful and persistent work of the Council on Pharmacy and Chemistry.—*Jour. A. M. A.,* November 5, 1927, p. 1610.

Scarlet Fever Antitoxin—The advantages of giving commercial scarlet fever antitoxin are necessarily dependent on the accuracy of standardization of the preparation and its use in adequate dosage. The chief advantage of giving commercial scarlet fever antitoxin as a preventive is that the administration of 100,000 neutralizing units prevents the development of clinical scarlet fever in a susceptible person already infected with scarlet fever streptococci, but not yet sick. This protection is transient, and as soon as the antitoxin is eliminated from the body the individual may again become susceptible to scarlet fever and should be more permanently protected by active immunization with graduated doses of the toxin. The advantages of giving scarlet fever antitoxin are: (1) If an adequate dose is given, the toxin in the patient's body is neutralized and death from toxemia is prevented. (2) If the antitoxin is given early, both the incidence and the severity of complications are reduced. (3) As a rule, patients who receive scarlet fever antitoxin early in the disease get rid of the scarlet fever streptococci sooner than those who do not receive the antitoxin.—*Jour. A. M. A.,* November 5, 1927, p. 1625.

Broadcasting Buncombe—In the not very distant past the quack and the faddist had the entrée—at advertising rates—to the majority of the newspapers of the country, and thus was made the point of contact between sucker and suckee. Today the majority of newspapers of wide circulation do not cater to the business of the medical faddist or the quack. With that avenue closed it was but natural that radio advertising should be taken up. Broadcasting in the United States is a commercial venture. Generally speaking the broadcasting station is out to sell time on the air. It is natural, therefore, that these stations should look with favor on any commercial organization that is willing to pay the price the station asks for puffing its particular line of goods. Thus it is that the radio

(Continued on Page 18)

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TRUTH ABOUT MEDICINES

(Continued from Page 16)

fans have their ears assailed almost nightly with some pseudo-medical fad, or the exploitation of some crude piece of quackery. One of the earliest entrants into this field was the "Palmer School of Chiropractic," which has its own broadcasting station, WOC, at Davenport, Iowa. Then there is that enterprising quack who specialized on "rejuvenation" operations and who owns and operates KFKB. Station WHT some months ago was broadcasting with great regularity the alleged virtues of a "patent medicine," Salicon. WJAZ, not so long since, was telling the radio world the marvels of that ingenious faker, Professor Scholder. Over KTNT of Muscatine, Iowa, comes the story of the "Tangley Institute," which has a sure-fire cure for varicose veins. WJBT of Chicago has described, via the ether, the marvels and virtues of the magic horse collar, the "I-on-a-co." The Voice of Labor—WCFL—permits Dr. Percy Lemon Clark of Chicago to broadcast health misinformation. Over this same station—WCFL—comes also the "Restoro," a base imitation of Wilshire's magic horse collar.—*Jour. A. M. A.*, November 19, 1927, p. 1786.

Diet for Pernicious Anemia—The essential feature of the Minot and Murphy liver diet in pernicious anemia is the administration daily of about 200 gm. of cooked weight of mammalian liver. This is combined with generous amounts of fruits and vegetables, containing from 5 to 10 per cent of carbohydrate, and red muscle meat. A reading of the work of Minot and Murphy leaves the impression that diet is more or less specific in pernicious anemia and only adjuvant in secondary anemia.—*Jour. A. M. A.*, November 19, 1927, p. 1803.

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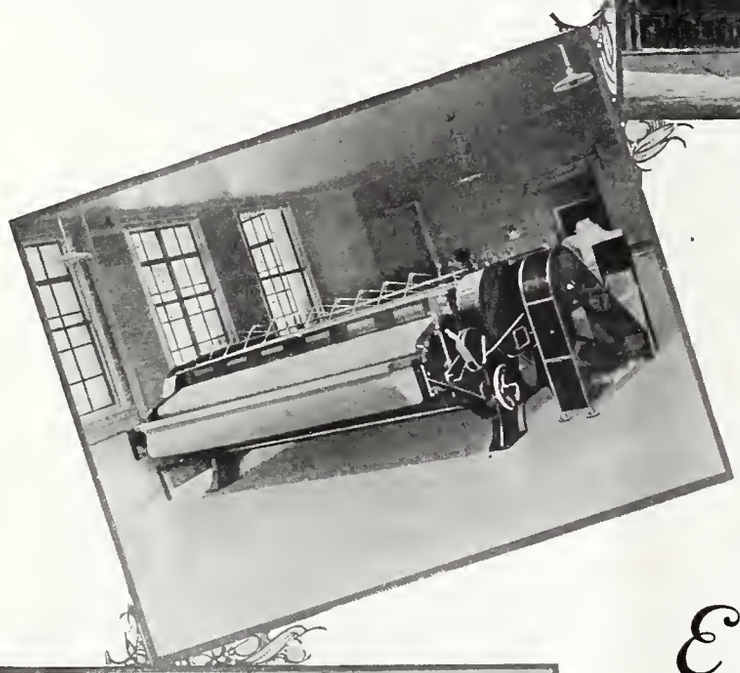

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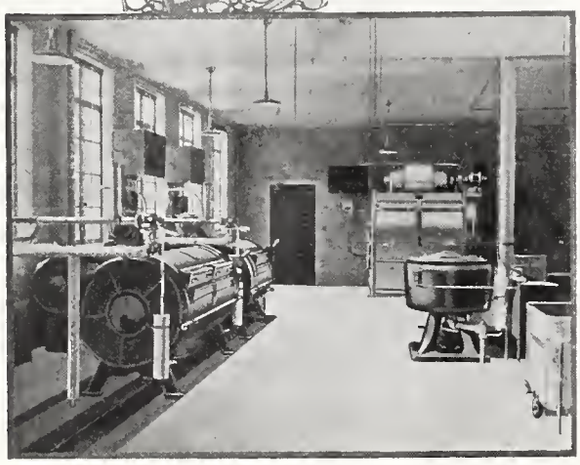

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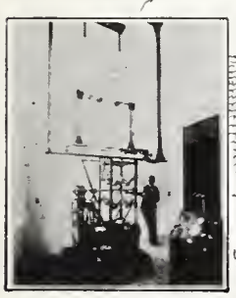

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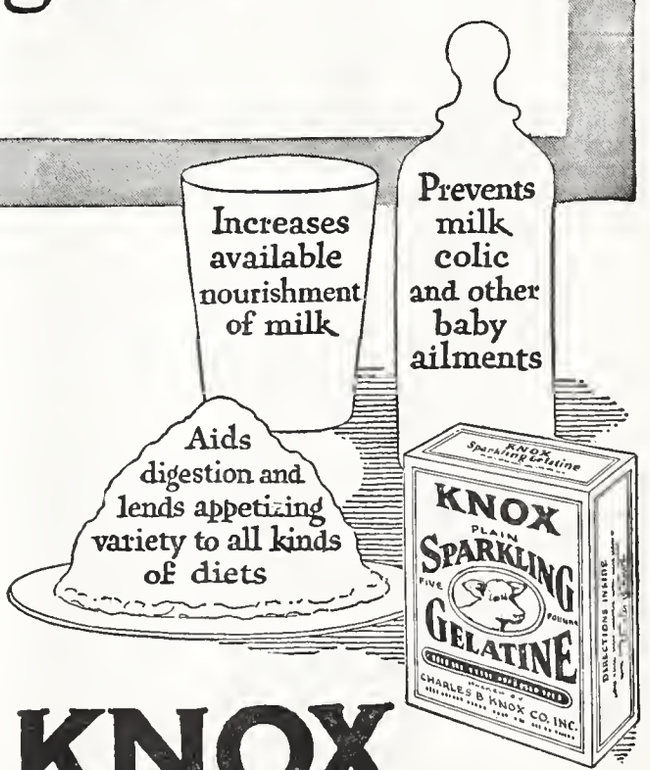
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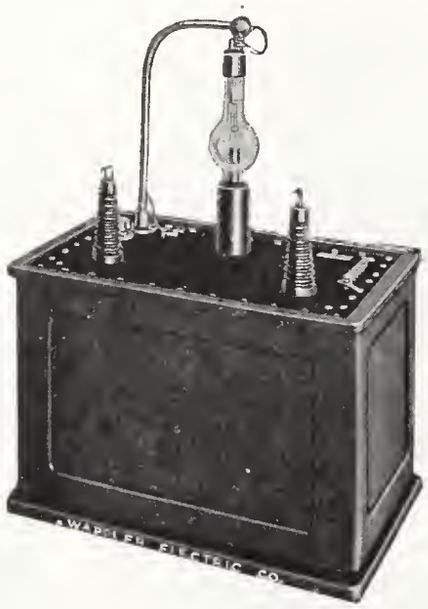

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Massachusetts General Hospital—The Massachusetts General Hospital on October 17 quietly observed, as in years past, the anniversary of the first public demonstration of ether. The usual clinics were held in the morning, followed by the alumni luncheon, but a departure was made in the afternoon exercises in that no speaker was presented and no formal meeting took place. Instead the newly completed connecting building between the out-patient department and the eye and ear infirmary, affording better and more closely allied dispensary facilities to both institutions, was thrown open to inspection.

Many of the clinics occupying the new building had prepared demonstrations for the benefit of the visitors, and during and following the inspection tea was served on the second floor. In the evening the Massachusetts General Hospital House Officers' Alumni Association held its annual dinner at the Harvard Club.—*Boston M. and S. J.*

Handicap of the Hard-of-Hearing Child—In one city school fifty-seven hard-of-hearing children repeated sixty-six classes, while fifty-seven with normal hearing, picked at random, repeated only eighteen classes. In another city there were three and one-half times as many hard-of-hearing as of normal hearing children who repeated grades. This report, based upon a two-year study, was given by a special commission on education for the hard-of-hearing at the annual meeting of the American Federation of Organizations for the Hard-of-Hearing, held at Chautauqua, New York, in June, 1927. The commission recommends that special lip-reading classes be formed for children with defective hearing. To prevent such children from acquiring the peculiar voice and enunciation of the totally deaf, they should be returned to the regular classes after enough facility to follow classroom instruction has been acquired.—U. S. Department of Labor.

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CALIFORNIA
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WESTERN MEDICINE

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DIETS FOR EXPECTANT AND NURSING MOTHERS

By W. D. Sansum, M. D.
Santa Barbara

Discussion *by Lyle G. McNeile, M. D., Los Angeles; Titian Coffey, M. D., Los Angeles; Frank W. Lynch, M. D., San Francisco.*

MY interest in the diets of expectant and nursing mothers was aroused many years ago when as a specialist I was caring for a diabetic girl whose mother was again pregnant. There were three healthy little girls in the family and the father naturally desired a son. In her previous pregnancies the mother had had more than her share of troubles. There was always nausea and vomiting in the beginning and a marked tendency toward overweight at term. All of the children had been bottle babies with their usual wakeful nights. The mother continually took cathartics as she had always done. I stopped these and managed her bowels with ample amounts of fruits and vegetables. She was able to take a proper amount of exercise and, by reducing the fat and including ample amounts of sugars and starches in the diet, I had no difficulty in managing her weight. She took no cathartics even through her confinement. After the baby came I gave her an extra quart of milk each day. She was able to nurse this baby and in fact had difficulty when weaning time came. This baby caused a minimum amount of care. It was another girl.

I am sometimes called to assist in the routine care of pregnant women but, as an internist, I am more frequently called in if something has gone wrong, when I generally find that these women have violated some of the diet laws that most individuals violate today.

FUNDAMENTAL PRINCIPLES IN ALL DIETS

There are certain fundamental principles which apply to all diets. Healthy individuals must eat ample quantities of certain foods if they wish to remain well, and the basic principles must not be violated even when illness demands special foods. It will be the purpose of this paper to review these laws and to stress the ones most commonly violated. Regardless of their relative importance, we seem to do the most good to the greatest number by discussing them in the following order.

THE DIET SHOUD CONTAIN AMPLE BULKY OR RESIDUE-CONTAINING FOODS

The residue-containing foods are the fruits, vegetables, and the whole-grain products. A lack of such foods results in constipation, which is usually alleviated by irritating cathartics or enemas, with resultant bowel distress. Most patients do not understand that the rate of residue movement through the alimentary tract is in the neighborhood of seventy-two hours; that is, the residue from the foods eaten today makes a normal bowel movement on the fourth day. Most patients do not appreciate that a drastic cathartic empties the alimentary tract completely, producing one or more loose stools, and that following such a procedure a natural stool should not be expected until the fourth day, provided the individual is eating normally. Normal individuals require an average of two pounds of residue-containing foods per day. Patients are advised to buy postal scales and weigh such foods. These foods should be weighed as eaten. For example, if apples are eaten raw, they should be weighed raw, or if eaten cooked, they should be weighed cooked. We find that apples, bananas, dates, figs, and raisins are especially efficacious. Constipation is a very common ailment, but the pregnant woman seems to have more than the usual amount of difficulty. She may need more than the usual amount of bulky foods, but I have never yet failed to obtain results with such a patient. Nursing mothers should be especially careful not to take cathartics.

THE DIET SHOULD CONTAIN AMPLE ALKALINE FOODS

The alkaline foods are the fruits, vegetables, nuts, and milk. We usually speak of them as foods containing the soda-like compounds. These foods have an alkaline ash and are used to neutralize the acid ash of such good foods as cereals, breads, meat, eggs, fowl, fish, and shellfish. A lack of the alkaline foods results in one form of acidosis which can best be measured by the acidity of the urine. The urine is usually acid, but there is no agreement as to how acid it should be. I believe that the reaction of the urine should be close to the neutral point or not more than two times as acid as the body.* I believe that urines

* From the Potter Metabolic Clinic, the Santa Barbara Cottage Hospital, Santa Barbara.

* Read before the Obstetrics and Gynecology Section, California Medical Association, at its Fifty-Sixth Annual Session, April 25-28, 1927.

* A neutral urine has a hydrogen ion concentration 2.2 times as great as that of normal blood, hence is 2.2 times as acid.

which are from one hundred to one thousand times as acid as the body are far too acid, and yet such urines are common. Other symptoms of this type of acidosis are headaches, sour mouth, sour stomach, often associated with gas and "biliousness," sour sweat, "sour disposition" and, most serious of all if this acidosis is permitted to exist for a sufficient length of time, serious blood-vessel disease with high blood pressure, impairment of vision and gangrene, which may terminate fatally in apoplexy, heart or kidney disease. Usually patients who are constipated have high blood pressure eventually, not because constipation is the cause of high blood pressure, but because both diseases have a common source in the lack of sufficient fruits and vegetables.

A beginning high blood pressure with or without traces of albumin in the urine is oftentimes seen during pregnancy. This, of course, may be due to an accident incident to the pregnancy itself. Foci of infection in tonsils, teeth or nasal sinuses must always be sought and removed when possible, since they must be considered as an important etiological factor in all cases of high blood pressure and nephritis in young people. Whatever the cause, I usually advise a basic diet. The following case history illustrates many important points in this connection.

Mrs. J., aged 24, entered the hospital on November 1, 1926, complaining of high blood pressure, headaches, nausea, vomiting, neuritis, fever, constipation, and loss of weight. She had one child 2½ years of age. During this pregnancy she had had an unusually difficult time with nausea, vomiting, high blood pressure, and albumin in the urine. At term a Cesarean section was done because she was in such a weakened condition. After the birth of this child she was kept in bed for nearly one year. The remainder of her history was essentially negative except for diphtheria as a child and a tonsillectomy at 15 years of age.

On admission we found a blood pressure of 172 systolic and 90 diastolic; an extensive neuritis; an afternoon temperature of 99 degrees F.; a very serious cathartic colitis (she had been taking cathartics for nine years, and since the baby came she had been taking each night either six ounces of milk of magnesia or four teaspoonfuls of castor oil); hemoglobin, 75 per cent (Dare); red blood cells, 4,400,000; white blood cells, 8500; and a one plus albumin in the urine.

Such blood pressures in young people are often due to infection which in this instance was found in the nasal sinuses. There was a bilateral frontal sinusitis, a bilateral ethmoidal and maxillary sinusitis and an empyema of the right sphenoid. Treatment of her nasal sinus condition immediately reduced her temperature to normal. Ample amounts of fruits and vegetables, cooked at first, soon cured her constipation and colitis. At the present time she is essentially well, has gained up to a normal weight and her blood pressure is 135 systolic. It seems to me that chronic sinus disease may very well have been the cause of the difficulty during her pregnancy, as it certainly was when I saw her.

THE DIET SHOULD CONTAIN AMPLE SUGARS AND STARCHES AND LESS OF THE FATS

There is an erroneous idea that sugar is not a good food; yet there is increasing evidence to show that all foods, even the fats, are eventually changed into sugar before they are finally burned by the body. There has been a constant increase in fat consumption. A lack of sufficient sugar associated with the overconsumption of fat produces the acetone or diabetic type of acidosis which is commonly seen in starvation, semistarvation, as a serious and often fatal complication during the diseases of childhood, during pregnancy, after surgical operations, and, most commonly of all, in fat people who wrongly attempt to reduce by the elimination of the starches and sugars from their diets. A feeling of sluggishness, the presence of acetone on the breath or in the urine, nausea and vomiting, are the more common early symptoms of this type of acidosis. In the early months of pregnancy the enlarging of the uterus often causes a reflex type of vomiting. This does not become alarming unless it robs the prospective mother of the ability to take and retain sufficient carbohydrate food to prevent the onset of acidosis. When acidosis occurs, however, the reflex vomiting may be aggravated beyond control, and a vicious circle is established. The worse the acidosis the worse the vomiting, and the worse the vomiting the worse the acidosis. If this occurs, and especially if the patient is seen early, I usually use the sour fruit juices sweetened with sugar. The sour fruit juices will be retained when other food will not. If the patient cannot retain any liquid, pieces of lemon dipped in sugar may be given. Glucose may also be given by rectum or intravenously. Small doses of insulin, 20 to 40 units given hypodermically, assist so promptly and efficaciously in this type of vomiting that one might assume that the acidosis might be due to a lack of insulin from toxic causes. I now believe that insulin is more or less concerned in the burning of fat and hence it may be given without sugar when necessary. The following case history illustrates the use of insulin:

Mrs. D., aged 22, entered the hospital September 21, 1926, and was referred to me by Dr. H. L. Schurmeier on September 24. On admission there was nausea, vomiting and backache, which had been growing worse for five days. She was approximately six weeks pregnant. Her urine contained large amounts of acetone and diacetic acid, but no sugar. Her temperature was 99.8 degrees F. On admission all foods and fluids by mouth were stopped and the stomach was washed with a weak sodium bicarbonate solution. Four ounce retention enemas containing 10 per cent glucose, 2 per cent sodium bicarbonate, and 40 grains of sodium bromid were ordered each four hours. Corpus luteum was also given. The enemas were not retained well, the vomiting and acetonuria were even more marked when I saw her on the 24th. I gave her 20 units of insulin at 11 a. m. and 50 units at 2:45 p. m. At 5 p. m. all tendency toward nausea and vomiting had stopped and she had a slight insulin reaction beginning with a sense of well-being as if her toxicity had gone, extreme hunger, and slight perspiration. The urine contained no acetone. We gave her a glass of milk and at supper time practically a full tray which she retained with no difficulty. The next morning she had a full breakfast with 40 units of insulin, and the full tray was continued. She left the hospital the next morning.

THE DIET SHOULD CONTAIN AMPLE CALORIES

Two thousand two hundred to two thousand five hundred calories should suffice. Overweight must be avoided, allowing, of course, for the weight of the gestation sac. Exercise where possible, together with a reduction of the fat rather than the carbohydrate in the diet, will control weight with-

out danger from the acetone type of acidosis mentioned above. A nursing mother in an endeavor to supply her baby with milk will often overeat of the rich, fatty foods, and drink quantities of whole milk. Her milk will have the usual low percentage of fat seen in human milk, and she will store the excess fat as body weight. Under such conditions skim milk should be used.

THE DIET SHOULD CONTAIN AMPLE PROTEIN

The proteins are the nitrogen-containing foods and are obviously essential for building up and maintaining the protein tissues of the body. I believe that one quart of milk, two eggs and one serving of meat, fish or fowl, or the equivalent, daily will be needed. The protein requirement of a nursing mother is high because she must feed herself and her baby. In addition to the normal amount of protein she should have not less than one quart of milk per day.

THE DIET SHOULD CONTAIN AMPLE MINERAL FOODS

The iron compounds are found in fruits, vegetables, egg-yolks, red meats, and the glandular organs. They are especially abundant and efficacious in liver. They are changed into hemoglobin, the red coloring matter of the blood, which carries oxygen from the lungs to the tissues.

The soda-like compounds are found in the fruits and vegetables. They carry the carbonic acid from the tissues to the lungs.

The alkaline phosphates are found in the fruits and vegetables. They are used by the kidneys to assist in maintaining the all-important alkaline balance of the body.

The calcium compounds are found in fruits, vegetables, and milk. They are used by the body to build up and maintain its bony structure and to prevent such diseases as rickets.

The sulphur compounds are found most abundantly in such vegetables as the cabbage and onion. They are used to build hair and nails.

The iodin compounds are found in the fruits, vegetables, and drinking water. The drinking water in the northern half of the United States is low in iodin. The iodin compounds are used to make the thyroid secretions.

Common salt is usually added to the food for seasoning purposes. It is used to make the soothing fluids in which the cells of the body are bathed.

THE DIET SHOULD CONTAIN AMPLE AMOUNTS OF THE VITAMINS

These vitamins, all found abundantly in fruits, vegetables, and milk, are:

Vitamin A, which prevents the form of blindness known as xerophthalmia.

Vitamin B, which prevents beriberi or peripheral neuritis.

Vitamin C, which prevents scurvy.

Vitamin D, which assists with calcium and sunlight in the prevention of rickets.

Vitamin E, which prevents sterility.

I believe that individuals who are taking a quart of milk per day together with two pounds of the fruits and vegetables so necessary for the prevention of constipation, and the supplying of an adequate amount of alkaline and mineral foods, need have no fear about vitamin deficiencies.

THE DIET SHOULD INCLUDE AMPLE WATER

Water is an excellent digestive aid. It is necessary for the elimination of sewage from the body, and by means of its evaporation a normal temperature is maintained in the body under normal and most of the abnormal conditions.

DIET MENUS

The diet menus which follow were built with all of these principles in mind. As printed they may be used for the expectant mother, but if there is any tendency toward overweight, the fat should be reduced. If there is any tendency toward high blood pressure or nephritis, milk and milk products should be freely substituted for the meat, eggs, chicken, fish and shellfish. Nursing mothers should continue with the same diets and should add at least one quart of milk, either whole or skim, to these diets. Some women do not like milk, but there is no substitute for it, and the mother usually loves her baby sufficiently to make any sacrifice necessary.

Santa Barbara Cottage Hospital.

* * *

NORMAL DIETS

1

Breakfast

Melon
Shredded Wheat with Milk and Sugar
Scrambled Eggs
Toast and Butter
Coffee with Cream and Sugar
Orange Juice

Dinner

Tomato Bisque
Roast Chicken with Dressing
Mashed Potato and Gravy
Baked Squash Buttered Celery
Pineapple and Marshmallow Salad with Whipped Cream Dressing
Bread and Butter
Chocolate Sundae Cake
Tea with Cream and Sugar

Supper

Creamed Macaroni
Spinach on Toast with Poached Egg
Baked Tomato
Bread and Butter
Assorted Fresh Fruits
Milk

Approximate composition and caloric value: carbohydrate, 300 grams; protein, 80 grams; fat, 100 grams; bulk, 800 grams; calories, 2420.

* * *

2

Breakfast

Orange Sections
Oatmeal with Milk and Sugar
Melba Toast Butter
Bacon
Coffee with Cream and Sugar
Grapefruit Juice with Lemon

Dinner

Vegetable Soup
Breaded Veal Chop Scalloped Potatoes
Creamed Cauliflower Small Peas
Tomato Salad with French Dressing
Bread and Butter
Apple Betty with Hard Sauce
Tea with Cream and Sugar

Supper

Creamed Dried Beef on Toast
Baked Potato Buttered Asparagus
Bread and Butter
Baked Apple
Milk

Approximate composition and caloric value: carbohydrate, 290 grams; protein, 90 grams; fat, 90 grams; bulk, 900 grams; calories, 2330.

* * *

3

Breakfast

Banana
Corn Flakes with Milk and Sugar
Coddled Egg
Toast and Butter
Coffee with Cream and Sugar
Orange Juice

Dinner

Cream of Celery Soup
Roast Beef Browned Potatoes
Buttered Carrots Stewed Tomatoes
Waldorf Salad
Bread and Butter
Cottage Pudding with Strawberry Sauce
Tea with Sugar

Supper

Creamed Chicken on Toast Points
Baked Sweet Potato Baby Lima Beans
Bread and Butter
Fresh Pineapple
Milk

Approximate composition and caloric value: carbohydrate, 285 grams; protein, 90 grams; fat, 90 grams; bulk, 800 grams; calories, 2310.

* * *

4

Breakfast

Apple Sauce
Cream of Wheat with Milk and Sugar
Bacon
Toast and Butter
Coffee with Cream and Sugar
Orange Juice

Dinner

Melon
Sirloin Steak Hashed Browned Potatoes
String Beans Egg Plant
Pear and Cottage Cheese Salad with French Dressing
Bread and Butter
Fruit Jello
Tea with Cream and Sugar

Supper

Stuffed Potato
Scalloped Cabbage with Cheese
Egg Ring Salad with Boiled Dressing
Bread and Butter
Hermits Fresh Sliced Peaches
Milk

Approximate composition and caloric value: carbohydrate, 305 grams; protein, 90 grams; fat, 102 grams; bulk, 900 grams; calories, 2498.

5

Breakfast

Sliced Peaches
Wheatena with Milk and Sugar
Omelet with Currant Jelly
Wheat Muffins and Butter
Coffee with Cream and Sugar
Orange Juice

Dinner

Vegetable Soup
Roast Lamb and Mint Sauce Mashed Potatoes
Buttered Onions Small Peas
Orange and Grape Salad with French Dressing
Bread and Butter
Ginger Bread with Whipped Cream
Tea with Sugar

Supper

Braised Sweetbreads with Mushroom Sauce
Creamed Potato Buttered Italian Squash
Bread and Butter
Red Raspberries Sugar Cookies
Milk

Approximate composition and caloric value: carbohydrate, 315 grams; protein, 90 grams; fat, 105 grams; bulk, 800 grams; calories, 2565.

* * *

6

Breakfast

Stewed Prunes
Puffed Rice with Milk and Sugar
Poached Egg on Toast
Melba Toast Butter
Coffee with Cream and Sugar
Orange Juice

Dinner

Cream of Corn Soup
Baked Halibut
Parsley Potato Sliced Tomato
Lettuce Salad with French Dressing
Fruit Sherbert Wafers
Tea with Cream and Sugar

Supper

Cheese Souffle
Baked Potato Fresh Spinach
Combination Vegetable Salad with Boiled Dressing
Bread and Butter
Fresh Strawberries
Milk

Approximate composition and caloric value: carbohydrate, 270 grams; protein, 80 grams; fat, 90 grams; bulk, 800 grams; calories, 2210.

* * *

7

Breakfast

Melon
Pettijohns with Milk and Sugar
Bacon
Toast and Butter
Coffee with Cream and Sugar
Orange Juice

Dinner

Split Pea Soup
Lamb Stew with Vegetables
Boiled Potato
Stuffed Prune Salad with Cottage Cheese and Whipped Cream
Bread Pudding with Fruit Sauce
Tea with Sugar

Supper

Baked Beans
Spanish Pickles Fresh Spinach
Orange and Grape Salad with French Dressing
Corn Bread Butter
Baked Apple
Milk

Approximate composition and caloric value: carbohydrate, 270 grams; protein, 80 grams; fat, 90 grams; bulk, 900 grams; calories, 2225.

8

Breakfast

Grapefruit
Shredded Wheat with Milk and Sugar
Scrambled Egg
Toast and Butter
Coffee with Cream and Sugar
Orange Juice

Dinner

Fresh Fruit Cocktail
Chicken Broth with Rice
Broiled Chicken Mashed Potatoes and Gravy
Buttered Asparagus Celery Hearts
Small Peas Olives
Pineapple Sundae and Cake
Coffee with Sugar

Supper

Boiled Rice
String Beans Baked Tomato
Tuna Salad
Hot Biscuits and Butter
Apricot Whip
Milk

Approximate composition and caloric value: carbohydrate, 270 grams; protein, 80 grams; fat, 90 grams; bulk, 800 grams; calories, 2200.

* * *

9

Breakfast

Rhubarb
Cream of Wheat with Milk and Sugar
Liver and Bacon
Toast Butter
Coffee with Cream and Sugar
Orange Juice

Dinner

Vegetable Soup
Roast Beef Potato Cake
Buttered Celery Cole Slaw Creamed Carrots
Bread and Butter
Stuffed Baked Apple
Tea with Cream and Sugar

Supper

Jelly Omelet
Buttered Peas Braised Lettuce
Pineapple and Cottage Cheese Salad with French Dressing
Bread and Butter
Peach Compote
Milk

Approximate composition and caloric value: carbohydrate, 310 grams; protein, 95 grams; fat, 100 grams; bulk, 900 grams; calories, 2520.

* * *

10

Breakfast

Orange
Shredded Wheat with Milk and Sugar
Broiled Ham
Toast with Butter and Jelly
Grapefruit Juice with Lemon
Coffee with Cream and Sugar

Dinner

Cream of Celery Soup
Swiss Steak Baked Sweet Potato
Sliced Tomato
Pear and American Cheese Salad with French Dressing
Bread and Butter
Tapioca Cream
Tea with Sugar

Supper

Chicken Souffle with Mushroom Sauce
Baked Potato Egg Plant
Asparagus Salad with French Dressing
Bread and Butter
Sponge Cake
Milk

Approximate composition and caloric value: carbohydrate, 290 grams; protein, 100 grams; fat, 110 grams; bulk, 800 grams; calories, 2550.

Supper menus may be substituted for luncheon menus.

* * *

DISCUSSION

Lyle G. McNeile, M. D. (523 West Sixth Street, Los Angeles)—Doctor Sansum's paper is a safe, sane outline of a subject regarding which the average physician knows very little, and is apt to be too busy to apply what he knows. The habitual use of cathartics, as outlined, is one of the great crimes of medical practice. I am glad that Doctor Sansum has called attention to the rôle of focal infections in the cause of toxemias of pregnancy, and to the importance of the removal of such foci, together with dietetic treatment, as a rational means of properly controlling the toxemia.

Titian Coffey, M. D. (1136 West Sixth Street, Los Angeles)—The question of interest to us is the bearing of diet on pregnancy and lactation, especially in relation to weight.

Never should a woman be more careful of her diet than during pregnancy.

After the initial stage of vomiting and nausea and after passing the fourth month, a sense of well-being takes place, and to make up for the sometimes rapid and severe loss of weight coincident with the vomiting, the appetite improves and patients are apt to complain of ravenous hunger. This stuffing process leads to rapid gain in weight, frequently as much as six or ten pounds per month. Allowing an average gain of three pounds per month or twenty-five pounds during pregnancy, this starts them off with a bang and by the sixth month they may be way over the normal weight standard and dieting becomes necessary to control or reduce.

If the mother is to go through her confinement with safety and provide a sufficient quantity of milk, her weight should be kept within reasonable limits and one should not put on over fifteen pounds nor exceed this amount over the normal, according to standards based on age and height. All the dangers of physiological break during the last months are increased by excessive weight, and fat women are poor milkers. The thin, wiry woman is usually the one with the abundant milk supply.

Supervision of the diet therefore becomes of utmost importance on this account alone, regardless of handling the problems of high blood pressure, cardiac decompensation or kidney involvement.

Diet in pregnancy should be well balanced, rather low in proteid, with diminished fats if weight is being put on too rapidly and should consist largely of vegetables, fruits and salads, using eggs and meat sparingly with suitable restrictions or omissions in face of kidney breakdown.

During lactation fluids should be given freely, but too frequently we have found the mother deriving all the benefit apparently, by losing her figure and not manufacturing a sufficient milk supply.

Three square meals a day of plain wholesome food, avoiding all rich and spicy foods, is frequently of greater aid in lactation than the quantities of liquid our patients are often forced to take.

Printed diet slips as Doctor Sansum suggests should be given each patient and instructions given verbally as to the importance of diet to the mother.

Dieting to control the size of the baby is futile, but to preserve the welfare of the mother is vital.

Frank W. Lynch, M. D. (University of California Hospital, San Francisco)—Doctor Sansum's paper re-

views in a clear manner the principles which underlie the use of diet as a means of treating many of the disturbances that are frequently encountered during pregnancy and that are characterized by acidosis. The essayist emphasizes the fact that the diet which usually appeals to individuals able to afford it is composed of foodstuffs whose residue contains acid ash which, even without concurring factors, favors the development of an acidosis which if long continued will cause definite pathological lesions which may prove of serious character.

A paper like Doctor Sansum's would prove of great interest to the majority of physicians in general practice even if it were designed as a general health measure for adults in general and had not been written specifically for the care of pregnant women. Physicians in general have comparatively little accurate knowledge concerning the possibilities of dietary treatment unless they have become interested in the actual details of the care of diabetic or nephritic patients. They welcome the appearance of any clear-cut paper giving detailed instruction in dietetic problems, especially if it emphasizes, as does the paper under discussion, the laws which underlie the treatment.

The value of the paper is greater since it deals with pregnancy, in which it is likely that some degree of acidosis is present constantly, resulting at first while the maternal body is struggling to become acclimated to the rapidly growing fetal cells, and later because the delicate metabolic balance is upset by dietetic errors, infections, etc., which may throw the patient into the condition now termed toxemia of pregnancy. Naturally this phenomenon is seen more often in individuals whose threshold of resistance is more narrow than normal, a condition which may not be recognized until the kidneys which had hitherto been functioning normally break down under the added strain imposed by pregnancy. Proof of this is afforded by the well-known facts that an ether anesthesia of one hour and a half given for a simple laparotomy may throw a pregnant woman with a mild toxemia into a fulminating type, and that pregnant women who have gained weight unduly rapidly more readily pass over into toxemic conditions than do those whose weight gain is slower and more uniform. Clinical evidence gives much support to the theory that pregnancy is in reality a "delicate state."

It is most reasonable therefore to use diet as one of our chief means of treating the toxemias of pregnancy that are characterized chiefly by an acidosis. The treatment is logical because kidneys, the chief organs of excretion, are easily injured when they are called upon to handle excreta which has not yet been converted into the blandest form. The experience of the medical world shows that the treatment of this type of case by drugs has been a conspicuous failure in spite of the fact that the patients as a group have youth on their side. In marked contrast is the conspicuous success which has attended the treatment of nephritis, diabetes, constipation, acute ulcers of the stomach, etc., by therapeutic measures in which diet assumes a leading rôle.

Doctor Sansum's paper to my mind is thoroughly sound and constructive and presents a method of therapy that will be even of greater interest in future time. It is in conformity with modern biological chemical study and the clinical experience of nearly all physicians who have been treating this type of patients along these lines. The dietary tables should be of great practical value.

I hope that the author will incorporate in his discussion the method which he advocated for estimating the acidity of the urine.

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Doctor Sansum (closing)—The reaction of the urine may easily be determined by means of dyes which are called indicators. Pieces of paper dipped in the dye, litmus, have been used for this purpose for a long time. This dye has the property of turning red in an acid solution and blue in an alkaline solution. The dye, litmus, however, is not a very delicate indicator; in fact I believe that a urine which is acid enough to turn blue litmus paper to red is far too acid, and a urine which is alkaline enough to change red litmus paper to blue is probably too alkaline. More delicate dyes, Brom Thymol Blue and Methyl Red, have therefore been chosen.

There is an excellent book entitled "The Determination of Hydrogen Ions" by W. Mansfield Clark, published by the Williams and Wilkins Company, Baltimore, which contains full details.

The dyes chosen have the advantage of changing to several colors, depending upon the degree of acidity or alkalinity. The dye, Brom Thymol Blue (B. T. B.), is yellow in a slightly acid solution and blue in a slightly alkaline solution. As the reaction changes from acid to alkaline the color changes gradually from a yellow green to a green, to a blue green, and finally to a blue. The dye Methyl Red (M. R.), is used in the more acid urines. In the extremely acid urines it is yellow with varying shades of color between.

The material used for the test:

1. Two small test tubes.
2. Two dyes. Brom Thymol Blue (0.04 per cent) for the less acid urines and Methyl Red (0.2 per cent) for the very acid urines.
3. Color chart.
4. Medicine dropper.
5. Distilled water.
6. Specimen of urine to be tested. This should be a part of a twenty-four-hour specimen, but single specimens may also be tested.

A medicine dropper full of urine (it need not be measured accurately because the dye expresses the ratios between the alkaline and acid components of the urine rather than the total amount of either) should be placed in a test tube, and for the first test, four drops of Brom Thymol Blue are added with enough distilled water to nearly fill the test tube. The shade of color should then be compared with the Brom Thymol Blue color plates in daylight. The green-blue shade marked 2.2 above, (pH 7) below, is, I believe, the ideal shade, but the shades marked 3.5 (pH 6.8) and 5.6 (pH 6.6), do not indicate very acid urines. If with this indicator the shade is yellow, another test tube should be used as before except that two drops of Methyl Red should be added and the shade compared with the Methyl Red color plates. None of these degrees of acidity are satisfactory, but they express the net result of the ash of the diet and should warn patients to change their diets radically toward the alkaline side.

THE TREND OF GASTRIC SURGERY*

By John Homer Woolsey, M. D.
San Francisco

Discussion *by Donald C. Balfour, M. D., Rochester, Minnesota; Wallace I. Terry, M. D., San Francisco; Burns S. Chaffee, M. D., Long Beach.*

GASTRIC surgery originated because of mechanical block from disease. Later pathology of certain lesions became the influencing factor. Today physiology is uppermost in the surgeon's mind. Retzius, Volkmann, Aschoff,[1] and Waldeyer observed and demonstrated the anatomical arrangement of the folds of the stomach along the lesser curvature directing the food by a quite definite course to the pylorus. Ninety per cent of the gastric ulcers and the great percentage of the malignancies occur in this great gastric pathway, the Magenstrasse. Continued irritation from the passage of material along this pathway interferes with the healing of an abrasion or injured area so located. In contrast to this location

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ulcers elsewhere in the stomach are of rare occurrence and heal quickly, due, it is thought, to the lack of active irritation and the protection by a mucous coat.

The pyloric canal first and the pyloric antrum secondly are the most frequently involved areas. Authors have repeatedly stated, and incorrectly so, that this portion of the stomach is the "acid-bearing area." The acid secretion occurs in the fundus of the stomach chiefly, and in the cardia to a less extent. Ivy[2] finds no acid nor its source, parietal cells, in the pyloric canal or antrum. The pyloric canal and antrum are then correctly "the ulcer-bearing area," and it is on this basis in part that partial gastrectomy is a rational procedure. Portis and Portis[3] have shown in animals that subsequent to a partial gastric resection a Pawlow pouch of the fundus continued to demonstrate acid formation unchanged in degree although the gastric acid content of the main lumen was decreased or absent. The reduction of acid then in the stomach content following partial gastrectomy is due to the neutralization by the upper intestinal content, and is the other reason for this radical procedure.

The lack of adaptability of tissues to unusual chemical reaction is a factor for consideration in gastric surgery. The duodenum tolerates an acid medium well, the jejunum does not. The desire to retain the normal course of the food is activated to a large extent by this. If the alkaline intestinal juices in a gastrojejunostomy are diverted from the stomach by a secondary jejunojejunostomy or by a Roux Y operation, jejunal or marginal ulcer is more likely to occur. Thus principles of physiology, as retaining the natural course of the food, obtaining the neutralization of the gastric acidity, the putting to rest of the ulcer by proper gastric emptying or drainage, substitution of a good healing tissue, or the removal of an area especially prone to ulceration, direct the gastric surgery of today.

PREOPERATIVE CARE

The patient as a whole is more considered today than ever before. Thought is being given to the preoperative preparation by food, fluids, and transfusion. Preoperative bowel preparation limited to a soap-suds enema the evening before allows the patient to sleep as late as possible into the morning. Prophylaxis against postoperative bronchopneumonia is essential. The mouth hygiene at the University of California Clinic, under the leadership of Doctor Terry, has seen a reduction of postoperative respiratory disturbance in upper abdominal surgery from 16.1 to 11.7 per cent, and in all surgery from 8.2 to 4 per cent. With the ease and safety of the patient in mind, ethylene and nitrous oxid are more widely employed.

Preoperative gastric lavage in patients with 30 per cent or more obstruction is excellent and should be performed the day previous as well as the morning of operation. In the absence of stasis, lavage is unnecessary, and from the point of asepsis seems unwise, as the normal stomach content is absolutely bacterial free. In addition it is a most tiring ordeal for a patient who needs all the physical strength that he can muster.

TECHNIQUE

Gentleness in handling tissues certainly applies to gastric surgery. Heavy compression clamps as the "Roosevelt" three-blade should be discarded forever. Anastomoses without clamps are urged, for jejunal ulcer is often a sequel to a compression clamp injury. The narrower crushing clamps such as the medium Payr or the special clamps of Shoemaker are sufficiently large in any resection, and a small crushing clamp for the duodenal stump is satisfactory. The less destruction of tissue the more quickly repair of tissue occurs.

Needles and suture material are vastly improved. The type of needle enclosing the suture end gives the finest of opening, and the suture with a needle at each end allows one to finish the inner layer at the anterior central point, rather than at the end of the anastomosis—a weak point. Catgut, so called, gastro-intestinal No. 1, is safe for use in both layers—even in instances of malignancy where heretofore many have employed at least one layer of silk or linen. The non-absorbable suture is undeniably a provoking cause of gastrojejunal ulcer, and it makes little difference in which layer it is employed.

The method of approximation of a gastrointestinal anastomosis has seen some change, especially in pyloroplasties. Direct layer approximation as submucosa to submucosa and peritoneum to peritoneum, followed by one inverting stitch, has given satisfactory closure and retained a larger lumen. In a gastrojejunostomy, two layers of sutures of which the inner is posteriorly a locked type and anteriorly a continuous Connell is recommended. The locked suture posteriorly will control any hemorrhage, and anteriorly all blood vessels should be ligated previous to their severance.

Peritonealization or, more properly, omentalization to cover all raw areas gives not only a protective covering against otherwise possible troublesome adhesions, but also reinforces the visceral closure against leakage.

Gastrojejunostomy—The location of the stoma is of first importance. It should be at the most dependent point or, in case of direct treatment in the lower half of the stomach to a lesser curvature ulcer, exactly opposite to it or slightly proximal. Any direct treatment of a lesser curvature ulcer breaks the continuity of gastric waves at that point, and that means the gastric content is propelled only to that level. Therefore, ideally the new stoma should be located so as to have the benefit of the initial peristaltic effort or at the most dependent point. In the posterior gastrojejunostomy the mesocolon should be attached upon the stomach wall 2 cm. from the gastrojejunal junction or interference with the stoma or jejunal loops is likely to result. Proper angulation of the efferent loop is important in order to insure proper emptying. The resulting stoma should allow two fingers to be easily invaginated, and this means an initial incision of approximately

7 cm. Anastomosis of the two jejunal loops below the gastrojejunostomy is unwise, as it destroys one important value of the operation—the neutralization of gastric acidity. Definite proof is at hand that with such a deflection of the intestinal juices jejunal ulcer is more prone to occur. Ligation of the pylorus is rarely advisable, and has been shown to be relatively more frequently followed by gastrojejunal ulcer.

Pyloroplasty—A pyloroplasty necessitates a freely movable duodenum. Mobilization of the duodenum as developed by Finney and popularized by Kocher can be employed. The pyloroplasties of C. W. Mayo, Judd, Heineke-Mikulicz, Horsley and Finney have a limited value and are, in my opinion, adapted only to the small ulcer on the pyloric ring or within 1 cm. of it. The Finney pyloroplasty is preferred, for by it the ulcer can be excised or treated directly and a definite sized stoma result. The chief fault of the others seems to be the poor emptying and the tendency for recurrence of another ulcer.

Partial Gastrectomy—The value and satisfactory results of this operation are evident. Points for discussion in technique are the location with regard to the colon and the position of the stoma. The relationship to the colon depends primarily upon the amount of stomach resected. If more than 50 per cent is excised, then the antecolic type, Balfour-Polya,[4] is preferable, for in the retrocolic position the mesocolon has to be attached to the stomach and distortion will follow which may interfere with either the stomach, jejunal loops, or transverse colon. The antecolic location also gives ease of approach if secondary operation should become necessary. The position of the stoma is debatable. Subjectively no difference has been noted with location in all places. Objectively experience has demonstrated that with the opening at the lesser curvature a marked bulging of the amputated end at the greater curvature occurs with each peristaltic wave; with the opening at the greater curvature satisfactory emptying occurs; and with the entire end open so that a stoma of approximately 7 cm. is effected the functional result has been excellent. With the opening at the lesser curvature the angle of section at the greater curvature should be quite obtuse and then the above-mentioned bulging, observed under x-ray, is less noticeable.

The closure of the duodenal stump is effected by the Kerr adaptation of the Cushing right angle stitch over a small crushing clamp, a second layer of continuous Lembert type, and then omentalization. No leakage has ever been experienced and drainage is never employed.

Gastroduodenostomy—The Billroth I operation when possible gives an excellent anatomic and theoretically physiologic result. Increased mobility of the lesser curvature which may be necessary to relieve suture tension is possible by the Mayo technique,[5] and is an important aid. The experience of Finisterer,[6] however, with this type of operation shows a marked tendency for ulcer recurrence especially of the marginal type.

Gastroduodenostomy, as described by Kocher and performed according to the usual gastrojejunostomy technique, is an ideal procedure at times.

Gastrostomy—A technique that can be done with the least incapacity of the patient; with the least infolding of the stomach, and without leakage is the ideal. The method of Stamm with the three concentric rings, performed by a 5 cm. left rectus incision under local anesthesia, necessitates bed rest only for two to three days, uses the least amount of gastric wall, and has no more leakage than the other types. The employment of a F. 24 mushroom catheter enhances its value and gives subjectively less distress.

Duodenal Ulcer—The chief dispute in gastric surgery ranges today about this type of ulcer. European clinics are tending toward partial gastric resection. Moynihan at Leeds and the majority of American clinics are in favor of more conservative procedure with a leaning to pyloroplasty or gastrojejunostomy. In instances of high free HCl and total acidity preoperatively, and as a rule a patient of high nervous tension, partial gastrectomy may be indicated. Certainly they are the type in which jejunal ulcer, recurrent ulcer and failure of subjective relief are more prone to occur with the less radical procedure. Ulcers that are located on the anterior wall immediately on the pylorus or 1 cm. from it may be adaptable to pyloroplasty, but certainly farther away are best treated by gastrojejunostomy. Direct attack on the ulcer is needed in instances of hemorrhage.

Duodenitis—This condition of the duodenum is characterized clinically chiefly by bleeding. At operation the surgeon not finding a definite ulcer to account for the hemorrhage usually opens the duodenum and finds a thickened edematous friable wall. Judd and Nagel[7] report in a relatively large series that this occurs in varying size areas. The author has met with only two instances, both so extensive that a closure of the duodenotomy due to the friability of the tissues was effected only with difficulty. A posterior gastrojejunostomy has given complete relief over a period of three years in each instance.

Gastric Ulcer—The malignant degeneration of a gastric ulcer if not demonstrable by the microscope certainly is suggestively so in the patient's history. This fact and the necessity of direct attack upon the ulcer to hasten healing, influences the operative procedure. Direct treatment by excision or cauterization alone does not give relief and further ulceration is prone to occur. Gastrojejunostomy alone has a similar sequence. The two latter procedures combined, however, do give good subjective and objective results. Deaver[8] favors sleeve resection for some lesser curvature ulcers, but is almost alone in this contention. In a general way it seems advisable to employ partial gastric resection for the ulcer of the pyloric canal, antrum, and lower one-third of the fundic area and direct attack upon the lesion combined with gastrojejunostomy for all ulcers located more proximally.

Gastric Polyposis—Malignant degeneration of

this condition has not been proven as great as first suspected. If local obstruction or hemorrhage is associated with this lesion excision or even partial excision is advised. Otherwise treatment should be symptomatic.

Gastric Carcinoma—In the presence of liver metastases surgery is contraindicated. The presence of lesser curvature lymph glands should not deter one from radical excision providing the malignant mass is removable. Partial gastric resection allowing a margin of 3 cm. from the cancer edge and a Balfour-Polya gastrojejunostomy is recommended. In inoperable gastric cancer with a large per cent of obstruction it has been found that a gastrojejunostomy, either posterior or anterior, gives inestimable comfort to the patient.

Gastrojejunal Ulcer—This lesion has occurred in the past in 2 to 3 per cent of instances, but with atraumatic technique, absorbable sutures, and more judicial selection of operative treatment, no instances have occurred at the University of California Clinic in the past five years. Partial gastrectomy with excision of the old stoma is the recommended operative procedure.

POSTOPERATIVE CARE

Pope, one of my most revered preceptors, has said "any anastomosis that will not hold water is a very poor piece of workmanship." It has been our experience to allow to our patients as soon as awake, water by mouth in teaspoonful doses followed by a gradual increase in the amount as tolerated. Food in the form of a baked potato, custard, gelatine, and strained cereals are usually started on the third day. Care with the diet and alkalis if needed, for at least six months are the discharge instructions. Especial attention immediately postoperative is given to the fluid intake and output. The former is maintained between 2800 and 4000 cc. by subcutaneous salt solutions or intravenous 10 per cent glucose solution. Postoperative stasis or vomiting, if so unfortunate a complication occurs, is best handled by the proper employment of the Jutte tube.[9]

CONCLUSIONS

1. Principles of physiology as well as pathology direct the present trend of gastric surgery.
2. Preoperative preparation to support the patient generally is more closely followed.
3. Atraumatic technique should receive more attention in gastric surgery.
4. Careful preoperative preparation, wise choice of operative procedure, atraumatic technique, and careful postoperative care for a period of six months will lessen the operative mortality and give a greater percentage of cures.
5. No one operative procedure can be the rule. A judicious choice of procedure dependent upon the location of the lesion, the type of lesion, the mobility of the affected viscera, and the patient's general condition should be followed.
6. The present trend of gastric surgery is toward the standardization of all operative procedures.

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DISCUSSION

Donald C. Balfour, M. D. (Rochester, Minnesota)—Doctor Woolsey has made a very comprehensive review of the fundamental principles of the surgery of the stomach and duodenum. He has very properly emphasized the importance of great attention to detail, both in the preoperative preparation of the patients, in the conduct of the operation itself, and in the postoperative care. It is by the most scrupulous attention to details that the best results from the surgical treatment of lesions of the stomach and duodenum will be obtained.

Another very important point which has been brought out in the review is that the selection of the operative procedure is of the greatest importance. Many unsatisfactory results occur because of the surgeon's blind adherence to some operation which has proved of value in certain types of cases and has been wrongfully applied in other types. It has become a platitude that the surgeon when operating for any gastric or duodenal lesion should approach the case with a perfectly open mind and do whatever type of operation is indicated in that particular case.

The general principles of the treatment of benign lesions are that for chronic duodenal ulcer adequate drainage should be established and maintained since this relieves intragastric spasm, gives the lesion a chance to heal, and offers the highest protection against recurrence of ulceration. It is to the patient's advantage in cases where the ulcer has been complicated by bleeding to get rid of the lesion. This may be accomplished by cauterization or by a partial duodenectomy.

For chronic gastric ulcer there are many reasons why the removal of the lesion is advisable. This principle should not be adhered to in such a way as to increase the risk of the operation greatly, since an indirect operation for the uncomplicated and free gastric ulcer is very often followed by an excellent result. Radical operation for chronic gastric ulcer is justifiable unless the ulcer is small and high-lying, in which event its removal by partial gastrectomy would mean the sacrifice of too large a part of the stomach. Ulcers in their more common situation, namely, near the angle of the stomach are usually suitable for partial gastrectomy.

Wallace I. Terry, M. D. (384 Post Street, San Francisco)—It is well occasionally to review stomach surgery and emphasize, as Doctor Woolsey has done, those procedures that have best stood the test of time. The chapter on stomach surgery is by no means com-

pleted and much more must be done before we can feel entirely satisfied with our results. When, however, we consider that the results today are much better than our early efforts we can hope for a much brighter future.

The rather high incidence of jejunal or gastrojejunal ulcers following gastrojejunostomies should make us think more frequently of some of the pyloroplasties or of gastroduodenostomies. The jejunum is ill adapted to receive stomach contents before they have been thoroughly alkalinized by the bile, pancreatic juice and the succus entericus, and it seems logical to have the stomach drain into the duodenum whenever the surgical condition permits.

From a mechanical standpoint, the surgery of stomach cancer is on a fairly high level of efficiency, but unfortunately in many cases we cannot make the diagnosis of malignancy early enough to get cures. The silent carcinomas of the stomach are all too numerous.

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Burns S. Chaffee, M. D. (917 Security Building, Long Beach)—Doctor Woolsey has presented an excellent review on the subject of gastric surgery. The detailed, painstaking care in the preparation of the patient, the operation of choice and technique, and the postoperative care, are all essential in securing good results.

Too great emphasis cannot be placed on gentleness in the handling of tissues in the abdominal cavity, especially in gastric surgery.

I have been very much interested in pyloroplasties, and especially the Finney type, for the treatment of ulcers in the region of the pylorus. This operation affords the opportunity of observing the mucous membrane of both the duodenum and the stomach for a distance of several centimeters from the pyloric sphincter and enables the surgeon to remove the ulcers or treat them with the cautery.

There are many cases in which it is impossible to mobilize the duodenum; however, there are many cases in which the duodenum can be mobilized by careful dissection and the severing of adhesions.

Patients usually do exceptionally well following this operation. Their convalescence is no more stormy than that of patients operated for chronic appendicitis.

A fluoroscopic examination of cases under my care and observed by T. R. Brown twelve to eighteen months after the operation revealed a normal functioning pylorus.

GASTRO-INTESTINAL SYMPTOMS MASKING GALL-BLADDER DISEASE*

By Clarence G. Toland, M. D.
Los Angeles

Discussion *by Wallace I. Terry, M. D., San Francisco; Sterling Bunnell, M. D., San Francisco; Andrew Stewart Lobingier, M. D., Los Angeles.*

GALL-BLADDER disease can be easily diagnosed when the typical symptoms are present. But this is not always the case, and the recognition of the gall bladder as the locus of abdominal pathology, even when such pathology is well advanced, is frequently very difficult. Most surgeons have met with puzzling cases in which positive symptoms point to the stomach or lower abdomen as the seat of trouble, and in which no symptoms incriminating the gall bladder can be found, that, on operation, disclose a badly degenerated or calculous gall bladder or ducts. Indeed as a concrete example of the frequency of such fallacious symptomatology I may quote Pfahler's [1] remark respecting the roentgen-ray examination of such patients: "The great majority of patients sent to me for an examination of the 'stomach' because of stomach symptoms do not have any lesion in the stomach but have disease of one of the other organs, most often the gall bladder or the appendix."

A part of the atypical symptomatology displayed in such cases may be due to adhesions resulting from old inflammatory processes within the abdomen or to direct adhesion of one viscus to another. Such adhesions may directly embarrass the duodenum or interfere with the passage of food.

But I venture to think that in the great majority of patients in which gall-bladder disease gives rise to atypical pain suggesting gastric or intestinal lesions, these symptoms are of reflex nervous origin and due to the direct and indirect nerve connections between the gall bladder and the gastro-intestinal tract. This view has been impressed upon me by a recent case of this type and by a study of the literature bearing on this subject.

CASE REPORT

The patient to whom I allude, a widow, age 47 years, had complained of indefinite abdominal symptoms for some years following a hysterectomy in 1919. The general symptoms consisted of soreness and distress in the lower left hypochondrium and over the lower abdomen in general; some frequency and burning micturition; poor digestion; loss of weight and a general tired feeling. In 1923 she was operated upon for a sudden obstruction of the bowel. Since that time until 1925 she had never felt well. She had intermittent attacks of hypochondrial pain radiating at times to the back but mostly down the hip, gas, vomiting, almost constant constipation, nervousness, loss of sleep and general abdominal discomfort. A physical examination disclosed nothing very definite except some left lower abdominal and midline tenderness.

Roentgen-ray examination showed slight bulging in the pars media of the greater curvature of the stomach associated with some irregularity in contour. There was also an apparent absence of peristalsis at this spot. The rugae were generally normal on the lesser curvature side of the stomach. There was no filling defect and in the roentgen-ray examination of the gastro-intestinal tract nothing else was observed either before or after administration of barium meal, which could be considered as distinctly abnormal. The gall-bladder region was quite negative.

No definite diagnosis could be made on the basis of the present history, physical, roentgenologic or laboratory findings. The patient was therefore kept under observation. Two months later we obtained real information from the past history; that at the age of 22 years, while pregnant, she had several attacks of typical gall-bladder colic; after that two attacks each year for five years; then a quiescent period until 1919, when the present complicated history began. It was decided to perform a laparotomy. Two large, black, cholesterin-mixed stones were found in the greatly enlarged common duct; the gall bladder was contracted to about one-third its normal size, chronically inflamed and very friable; there were many adhesions throughout the abdomen and the transverse colon and a few coils of small intestine were attached to the abdominal wall beneath the scar of the old incision. A choledochotomy and partial cholecystectomy were done.

1. The main point which I wish to stress in this case is the presence of such pronounced biliary-tract pathology in the absence of any clini-

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cal or other data which might have suggested it since 1919.

2. A preoperative diagnosis of gall-bladder pathology would not have been made had we been unable to obtain the story of the past history. There was no icterus, no gall-bladder region tenderness, none of the typical pains, nor were the stools such as might have suggested bile trouble. The clinical and other evidence seemed to point to some indeterminate gastric or intestinal lesion. The symptoms I consider to have been mainly the result of reflex reactions from the gall-bladder although no doubt the presence of the many adhesions contributed.

REFERENCES IN LITERATURE

On looking over the literature I find a certain number of facts pertinent to this case, especially to the reflex symptoms arising in the digestive tract in connection with gall-bladder disease.

Ramond and Parturier,[2] in a quite recent article, have called attention to the particular reflex reactions. They mention especially the commonly observed spasm of the pylorus, mesogastric spasm, esophageal spasm, and colonic spasm. While any of the segments of the colon may show isolated spasms under gall-bladder excitation, Ramond and Parturier refer to two which are especially prominent, viz., ceco-colic spasm and that of the left colic angle. Both of these spasms are observed with great frequency in patients with cholecystitis.

The state of constipation, diarrhea or muco-entero-colitis, which accompany acute or chronic cholecystitis, Ramond and Parturier think can only be the effect of colonic reflexes from the gall bladder.

The points in the digestive tract in which reflex spasmodic effects of vesicular origin are produced are, according to Ramond and Parturier, exactly those referred to by Blamoutier[3] as the predominant sites of antiperistaltism.

One of the most interesting features of my own case, the value of which has only recently come to my notice, was the radiologic showing of an incisura in the great curvature of the stomach almost suggesting a slight bilocular condition. Ramond and Parturier refer very particularly to this mesogastric spasm of vesicular origin as an important indicative sign of gall-bladder disease when found in connection with spontaneous left hypochondrial pain and appearing about four hours after eating. At the same time radioscopy shows a normal small curvature. Ramond and Parturier report a case in which the radiological determination of this mediogastric spasm clinched the diagnosis.

REFLEX SYMPTOMATOLOGY

In order to understand the reflex symptomatology arising in connection with gall-bladder disease we must have a clear idea of the nervous connections of the viscus.

In regard to the nerves supplying the gall bladder and their relationship to the innervation of the gastro-intestinal tract; Griffiths[4] states that the nerve supply of the gall bladder is derived from the hepatic plexus which is an offshoot from the celiac plexus, itself derived from the fifth to tenth thoracic nerves. There are also fibers from the right phrenic nerve.

Freese[5] states that Heidenhain and Doyen showed that the gall bladder and ducts received motor fibers by way of the splanchnics. The musculature of the gall bladder is provided with both constrictor and dilator nerve fibers by the splanchnics. Both the motor and inhibitory fibers arise from the spinal cord in the roots of the sixth to the thirteenth dorsal nerves.

Piersol's Anatomy (p. 1370) states that fibers from the hepatic plexus traverse the lesser omentum, the bile duct, the hepatic artery and the portal vein; and, after inosculating with fibers of the left vagus, enter the liver in which they ramify. In addition to its terminal distribution the plexus contributes filaments to the right suprarenal plexus and furnishes offshoots which follow the collateral branches of the hepatic artery supplying the areas in which these arteries are distributed.

The study of the nervous connections of gall bladder shows how easily irritation from disease in this viscus, even if latent, may give rise to symptoms which suggest lesions in various other regions and organs of the abdomen. This study should serve to warn us against the fallibility of abdominal symptoms unless their origin is unmistakable. Indeed a study of gall-bladder disease literature is very eloquent in this regard.

Griffiths,[4] Hunterian lecturer Royal College of Surgeons, England, who has done considerable investigation on the anatomy and physiology of the gall bladder, is very insistent that irritation of the mucous membrane of the gall bladder causes a reflex irritation, which is most marked by its action on the stomach.

Thies[7] in discussing the abdominal symptoms with a vegetative nervous etiology in gall-bladder disease noted that severe constipation was found in 86.6 per cent of the gall-bladder cases studied.

Rohde[8] in the study of two hundred cases of cholelithiasis notes the frequent stomach and duodenum reflex symptoms, especially spasm.

Pottenger[6] states that gall-bladder disease and chronic appendicitis are the two best known conditions for producing colicky pains, spasticity and stasis in the intestinal tract.

Ramond and Parturier in their investigation of gall-bladder disease reflexes rather pointedly refer to the reflex of left hypochondrial pain. The epigastric reflex pain in gall-bladder disease may be felt in the peripheral terminations of the sixth and seventh dorsal nerves independent of any local pathology; or it may be a localized visceral pain due to reflex disturbances of peristalsis. I believe this was the etiology of the pains in my own patient. Of course it must be remembered that the typical radiation of pain from the gall bladder itself in gall-bladder disease may be entirely disturbed by the presence of pericholecystic adhesions.

The marked constipation which often accompanies gall-bladder disease probably arises from

reflex nervous interference with the normal peristalsis of the bowel. This interference may be sufficiently great to produce complete atony.

Spastic, dynamic or functional ileus, sometimes termed paralytic ileus, is often due to reflex spasm of this kind arising from gall-bladder disease.

Moore[9] thinks that atony of the bowel, which may follow lesions elsewhere in the abdomen, has for its most probable etiology disturbances of innervation. The intestinal wall derives its innervation from the vagus and splanchnic nerves. The vague innervates the whole of the small intestine, and the effect of irritation of its fibers is to increase peristalsis. On the other hand irritation of the fibers of the splanchnics tends to inhibit movements of that portion of the intestine controlled by them. A paralysis of the tract may result from an abnormal overactivity of the sympathetic or from inactivity of the vagi, and such motor disturbances may be of reflex origin.

The ileus of reflex nervous type originating from gall-bladder disease may be mistaken for mechanical obstruction. One of the causes of functional ileus is interference with the nerve supply of the muscular wall of the intestine. This supply is from Auerbach's sympathetic plexus, which is of course connected with the nervous mechanism of the biliary tract. These patients very frequently show the presence of the classical symptoms of intestinal obstruction without any evident symptoms drawing attention to the gall-bladder region.

In conclusion I desire to repeat that gall-bladder pathology is often extremely deceptive in regard to its symptomatology. In the presence of abdominal symptoms which cannot be clearly accounted for, the surgeon should remember that many gastro-intestinal suggestive symptoms are but reflexes originating from a diseased biliary tract. This tract should always be investigated in all abdominal conditions. Mesogastric great curvature, ceco-colic, and left hepatic angle spasmodic phenomena are the most frequent nervous reflex results of gall-bladder disease.

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DISCUSSION

Wallace Irving Terry, M. D. (384 Post Street, San Francisco)—Doctor Toland has done well in calling our attention to some of the unusual manifestations of gall-bladder disease. It is certainly true that gastro-intestinal symptoms are dominant in a fair proportion of cases where the gall bladder is the only diseased organ found at operation. Yet I can recall but two such cases which did not have a tender head area over the ninth or tenth rib posteriorly on the right side.

Cholecystography is of great importance in the diagnosis of gall-bladder disease and, of course, would have thrown light on the case discussed by Doctor Toland.

The description given in the paper of the various sympathetic links between the gall bladder and other viscera, is illuminating and important.

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Sterling Bunnell, M. D. (516 Sutter Street, San Francisco)—The normal physiology of the gastro-intestinal tract as evidenced by x-ray and clinical symptoms is readily upset by any irritant in the vicinity whether inflammatory or mechanical. It is altered to a greater extent by irritation from organs of the digestive tract than by those in other systems, and to the greatest extent by those that center about the most vulnerable part, the solar plexus, such as the gall bladder. Unless we interpret the findings on broad principles, instead of as specific effects of the gall-bladder, confusion is bound to arise.

From the cardia to the rectum there are four regions of prominent sphincteric action which are starting points of spasm, reverse peristalsis, and reflex inhibition, and these are affected in different ways according to the idiosyncrasy of the individual and the location and character of the irritant. The effects of an irritant in certain locations are apt to be grouped along the digestive tube in the segment where the nerve connections are the more intimate. Thus the gall bladder affects, in the order of intensity, the pylorus, cardiac orifice, ileocecal region and the descending colon; but other irritations in the gall-bladder region may do the same. The kinds of irritations from the biliary tract are also quite dissimilar. Some are mechanical, as from stone, stricture, or overacting cystic kink or from traction of adhesions; and others are inflammatory, as cholecystitis, hepatitis, adenitis, or pancreatitis. Within these there are variations in type and intensity. Therefore the differences in reflex effects are great. We should learn not only the coincidence but the meaning of each, and our judgment must be based more on the underlying principles than, empirically, on specific signs. Cholecystography aids greatly. At times, however, the gall bladder is at fault; not only when localizing signs or symptoms are absent, but also when at operation the macroscopic pathology is scarcely recognizable. In such cases we must be guided by our judgment of the whole case history.

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Andrew Stewart Lobingier, M. D. (Merritt Building, Los Angeles)—For many years a confusing gastro-intestinal symptom complex misled the diagnostician in interpreting the true pathology in the liver, gall bladder, and pancreas. We are indebted to the illuminating clinical studies conducted in the Leeds Clinic for the clarification of this symptomatology. We learned not to wait for terminal symptoms such as jaundice, bile in the urine and nocturnal colic to diagnose gall-bladder disease. Gas distension, discomfort on taking food, light chilly sensations, tenderness over Robson's point and rigidity of the upper right rectus are the early signs of an infected liver and gall bladder. Pylorospasm without classical symptoms of ulcer; paresis and retention of gas in the hepatic flexure and first portion of the transverse colon; spasticity of the descending colon with pain in those areas of colonic distension, are the usual concomitants of chronic hepatitis and cholecystitis. We believe these conditions are due as much to omental adhesions to the angle of the colon or to the gall bladder and duodenum as to reflexes from the inflamed loci. There is an unquestioned reflex to the gastric autrum and to the descending colon. But an acute hepatitis and an acute cholecystitis are as apt to be followed by chronic perihepatic and pericholecystic adhesions to the duodenum and omentum, as a matted down and obstructed hepatic flexure may follow an appendicitis or a prolonged ulcerative colitis.

We have so frequently found obstructive adhesions associated with the gastro-intestinal symptom complex seen in cholecystitis with or without gall-stones, that it seemed obvious that reflexes from a disturbed innervation to the viscera must take a secondary position in accounting for the symptoms.

Doctor Toland's paper affords suggestive interest for a more extended clinical study.

THE PELVIC FLOOR—CONSIDERATIONS REGARDING ITS ANATOMY AND MECHANICS*

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RÔLE OF THE LIGAMENTS

ALTHOUGH the obliterated and unobliterated vessels, the nerves and their surrounding connective tissue sheaths and also the fascial extensions upon the pelvic viscera, no doubt are important factors in the maintenance of the position of the pelvic organs, it would seem that the rôle played by the broad, and especially that played by the sacro-uterine and round ligaments in pelvic support, has been greatly overestimated. Schroeder,[16] 1922, emphasized this in connection with the question of malposition and prolapse. He regarded these ligaments as only of secondary importance, and the muscles, vagina wall and connective tissue as the real supports of the uterus. According to him the round ligaments are relaxed even in a retrodisplaced uterus.

It may be that the favorable results reported after shortening of the sacro-uterine or the broad ligaments may have been due in a considerable measure to the resulting adhesions and to the contractile effect of the scar tissue formed at the site of operation. Tschaussow,[17] 1887, also concluded that the uterosacral ligaments have only a negative influence. He added that muscle fibers are not always present in these "peritoneal folds" of children and that they are wholly insignificant in them as in the case of adults.

The sacro-uterine ligaments are really not such. This was implied by Somers and Blaisdell,[18] 1913, and by Blaisdell,[19] 1917, who spoke of them as "potential ligaments," and Dixon[6] quite correctly said that our attention frequently is directed "to strands of connective tissue often described as ligaments." It is clear that potential ligaments exist wherever there is considerable subserous tissue, but they have no existence in fact and they surely cannot be operated upon. Nor must it be forgotten that prolonged traction upon subserous tissues or the peritoneum may result in local thickening anywhere. The variously directed connective tissue fibers will assume a more parallel direction under these conditions. This is illustrated by the statement of Cuthbertson that "not infrequently the uterosacrals are so thin that they can be discovered only by making traction on the cervix."

Although the sacro-uterine plicae of peritoneum also contains smooth muscle they nevertheless are very inconstant both as to prominence and extent. They do not always reach the sacrum and never are attached to it firmly. Hence, even when they do reach the sacrum the terms rectogenital and recto-uterine would seem to be preferable.

Although these peritoneal folds are rather inconstant I cannot regard them as altogether unimportant, and if operations performed upon them or the included connective tissue and muscle, have resulted so favorably this is excellent proof of the fact that the peritoneum is not a negligible factor in pelvic support. Their direction is rather unfavorable for checking the descent of the uterus and vagina, and it would seem that they undoubtedly have been made too much of. The smooth muscle within them has even been named retractoruteri, much as we speak of a suspensory muscle of the duodenum, and these muscular fasciculi have even been regarded as tensors of the anterior vaginal wall and of the vesicovaginal fascia and Smyly,[20] 1919, regarded them as dilators of the fornices, causing ballooning of the vagina, said to be present in threatened abortion. The recto-uterine ligaments have been represented as fully a centimeter wide and one-half that thick in illustrations accompanying articles on operations for the correction of uterine displacements and in other literature in connection with this subject.

The pubovesical ligaments and the tendinous arches of the pelvic fascia firmly anchor the bladder, but it would seem that considerable displacement of it and of the urethra can occur by rotation about the lower border of the pubic symphysis as an axis, without much stretching of these ligaments. Hence they do not seem to be of such great importance in the beginning of prolapse, and I doubt whether general pelvic prolapse is initiated by lesions in the urogenital diaphragm alone, for injury to the pelvic diaphragm and fascia would seem to be a *sine qua non* for much yielding of the urogenital diaphragm. Nothing could better illustrate this than the drawing of a sagittal section of the pelvis of a multipara shown in figure 4. Although the bladder is markedly lowered in position, dislocation of it is not nearly so marked as in the case of the uterus, ovaries, and rectum. In this case the uterus, and especially the round and broad ligaments and, of course, the contained vessels and nerves were greatly stretched. The same thing was true of the pudic vessels and nerves, and had it not been for the firm resistance of the urogenital diaphragm and the pubovesical ligaments the bladder undoubtedly would have been displaced much more.

Muscles unsupported by other structures do not bear the strain of constant tension well. They are likely to yield under it. This applies particularly to the pubo- and iliococcygei, which are thin muscles and which play a rôle phylogenetically foreign to them, representing flexors and abductors of the tail. Since Williams[21] stated that the levator ani may be half a centimeter thick he probably had living hypertrophied muscles in mind, for I have never seen a muscle even in

* This is the second of two papers on this subject, the first paper being printed in this journal in last month's issue.

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Fig. 4—Drawing of a sagittal section of a partially dissected female pelvis with marked prolapse of the uterus and displacement of bladder and rectum: (1) Obturator foramen. (2) Symphysis pubis. (3) Levator ani. (4) Round ligament. (5) Cavity of uterus. (6) Fibroid. (7) Cervix uteri. (8) Cervical canal. (9) Urinary bladder. (10) Rectum. (11) Ureter and ovarium vessels. (12) Coccyx.

muscular young male cadavers, more than very roughly approximating such a thickness. I realize fully that most of the subjects I have seen belong to later decades, but we have also had a small number from the third decade, and I surmise that such statements as well as others in which the perineal body is represented as five centimeters long, find their explanation in impressions obtained from torn, contused, swollen and perhaps hypertrophied, tissues seen after labor.

Although the superior fascia of the urogenital and especially that of the pelvic diaphragm, varies considerably in strength in its different portions and also in different individuals, it nevertheless is this fascia and the various reinforcements of it, such as the pubovesical ligaments and the lower tendinous arch which must bear the main burden of constant pressure exerted upon the pelvic organs. Did they not do so it would seem that the musculature easily would become elongated and undergo atrophy. Whenever the musculature is poorly developed or partly deficient, which is not uncommon, pelvic support necessarily devolves upon the fascia. Were the latter not able to assume this burden the pelvic floor of both sexes would yield far more commonly than it actually does.

A strong musculature may be accompanied by a strong fascia and a weak musculature by a weak one, but opposite conditions also are met with. Not infrequently the obturator portion of the pelvic fascia is surprisingly thin in otherwise very well-developed bodies and a strong thick pelvic fascia may accompany a really thin muscle.

Although I have not specially mentioned them, the inferior fasciae of these diaphragms no doubt are not negligible although far less important than the superior, except perhaps in case of the inferior fascia of the urogenital diaphragm. These fasciae are aided in their protective rôle toward the musculature of these diaphragms by the peritoneum and the subserous connective tissue and in a minor way by the ureters and the obliterated hypogastric arteries. The latter frequently lie in broad, thick folds of peritoneum which descend into the pelvis and which arch across the upper portion of its lateral walls. All these structures, however, play merely an auxiliary rôle as do the perineal and great gluteal muscles which support especially the coccygei. That their rôle is auxiliary is shown also by the fact that obturator, perineal and ischiadic herniae are not prevented by the mere presence of normally developed muscles in these regions. If the peritoneum and fascia yield the muscles no longer seem sufficient.

That the peritoneal folds or so-called ligaments, and the peritoneum elsewhere, and also the subserous connective tissues, yield easily to continued pressure is illustrated unusually well by the history of uterine suspensions and by the amazing shifting of the duodenum, stomach, and liver rarely met with. In rare cases of rotation of the liver, even to 90 degrees (Meyer,[22] 1924), following depression of the right dome of the diaphragm in cases of thoracic effusion or chronic tuberculous fibrosis, the pylorus may lie in a line to the left of the cardia, the upper portions of the duodenum having been pushed across the midline, the gall bladder lying directly above the displaced pylorus. As Keith,[23] 1924, put it: "The living peritoneum is the most ductile of structures."

However, if, as recorded in the literature, prolapse of the pelvic viscera is not an invariable consequence of deep injury of the female perineum, it is clear that other structures than the inferior fasciae and the muscles of the pelvic diaphragm must in these cases temporarily support the pelvic viscera. This should not seem surprising if the normal position of the uterus and the great strength of the pubovesical ligaments and that of the superior pelvic fascia is borne in mind. Injury of the fibers of the pubococcygei permits a separation of their medial borders through retraction. Injury to the iliococcygei has

a still more disastrous effect because they run more transversely. Contraction of the iliococcygei raises the pelvic floor, but causes tension laterally at the midline, thus permitting displacement of the medial portions after injury there.

Anyone especially interested in the rôle of the smaller bundles of the pelvic and perineal musculature will find a good discussion and representation of them in Kalischer,[24] 1900.

RÔLE OF FAT

Although increase in the quantity of extraperitoneal fat results in an increase in abdominal pressure, I am inclined to think that in spite of the increase in volume and consequent pressure, fat nevertheless can act as a fairly effective stop-gap. This is suggested by the crowding of the pelvic viscera which often accompanies adiposity and by the fact that small lipomata frequently securely block the entrances of the obturator, the

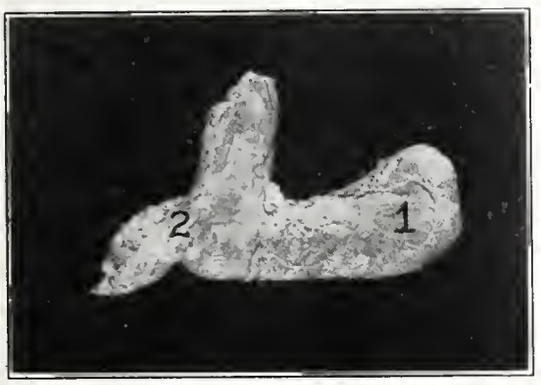

Fig. 5—Photograph of an obturator lipoma (1) with a small portion of the wall of the urinary bladder (2) attached. Natural size.

abdominal inguinal and femoral rings. When, as not infrequently is the case in the female, the amount of intrapelvic fat is so considerable that it hedges in all the pelvic viscera, it must be of considerable moment in supporting them as well as in greatly restricting their mobility, for it firmly binds them together.

It seems highly probable to me that the fat in the base of the ischiorectal fossa is by no means a negligible factor in pelvic support in both sexes. Were it not for this accumulation and for the subcutaneous fat surrounding the superficial anal sphincter, which is continuous with that in the ischiorectal fossa, it would seem that the weak pelvic fascia, often present in cases of poorly developed pubo- and iliococcygei, should more frequently yield to the normal intra-abdominal pressure. All this fat is bound together very firmly by coarse interlacing connective tissue septa, and united to the subcutaneous tissues and the deep fascia at the inferior borders of the glutei. Although the fat in the upper portions of the ischiorectal fossa is small in amount and can always be removed easily it nevertheless helps to hedge in the pelvic viscera and gives support to the pelvic floor from the outside.

The fact that the amount of fat contained in the ischiorectal fossa in emaciation or in thin persons, is relatively small in amount does not greatly affect this conclusion. One might just as well hold that lipomata in the obturator or inguinal canals cannot have a preventive effect when present because they usually are absent. I am not assuming an etiological relationship between these things, but am merely maintaining that when present they must strengthen the areas involved. Anyone interested in inguinal lipomata and their relation will find them considered in the articles by Broca,[25] 1888; Imbert,[26] 1897; and Blaisdell,[27] 1913.

I have already referred to Dixon's view regarding the important rôle played by the fasciculi of smooth muscle present in the subserous tissue about the cervix uteri. Dixon[6] further suggests that the support of the uterus is active and not passive and is due to the bundles of smooth muscle fibers described by him. Dixon[6] believes that these fasciculi are under control of the uterus and that contractions in the form of peristaltic waves which pass from it to them play a predominating rôle in uterine support. He further suggested that similar peristaltic waves in the round ligaments keep the uterus anteflexed on the bladder, and Tweedy,[28] 1919, went so far as to insist on the presence of tendons on these fasciculi of smooth muscle. These tendons in spite of Dixon's[6] wise admonition he insisted on calling "uterine tendons" because, according to him, they act as true tendons. Unfortunately for Tweedy[28] no tendons are known to exist on smooth muscle, and it is fairly safe to predict that no one will discover them.

Although living fat must be regarded much as a fluid as far as the transmission of pressure is concerned, it must not be forgotten that fat is composed of lobules each of which is surrounded by connective tissue. It is interesting that Keith,[23] 1924, regards fat as a factor in the formation rather than in the prevention of herniae. However, since fat is firmly attached to the surrounding tissues it should make a better stop-gap than loose areolar and connective tissues containing little or no fat, for it must be much more difficult to displace fat than to stretch them.

It would seem that the small lipomata so frequently found in the inguinal obturator and femoral canals must have formed *in situ* instead of being herniated there by intra-abdominal pressure as suggested by Keith.[23] The same thing undoubtedly is true of similar accumulations outside of foramina and hiatuses in aponeuroses. I find it difficult to accept the interpretation of Gladstone,[29] 1908, and Keith,[23] 1924, for it would seem that small lipomata, such as shown in figure 4, which develop outside the obturator foramina or in the inguinal canals frequently act as an effective stop-gap and the former often also firmly anchor the bladder in the regions of the obturator foramina as reported by Meyer,[30] 1924. These lipomata may be attached firmly to the bladder or more indirectly with it through the surrounding connective tissue and fat.

In considering the contradictory results recorded in pelvic and perineal operations for prolapse, it seems to me that they can be largely accounted for by the variable anatomical conditions known to exist in the pelvic floor. More-

over to what extent *restitutio ad integrum* will occur in any particular case no doubt depends upon the age and habitus of the individual and upon the length of time that the various supporting structures have been subjected to abnormal conditions as well as upon the good judgment and surgical skill of the operator.

It is significant and surprising to some, no doubt, that the pelvic floor may and does yield caudally not only in multipara, but also in nullipara and even in the male. This yielding manifests itself in a general though not in an equal descent. Although the pelvic diaphragm mainly is affected, there is a depression of the entire perineal region and especially an enlargement of the anococcygeal interval in these cases. This downward displacement affects particularly the midportion of the levator ani and results from long-sustained, increased abdominal pressure. In elderly nullipara the anococcygeal distance may be 6 to 7 centimeters, and I found it as great as 9 centimeters in the body of a very muscular negro in whom gradual but complete occlusion of the superior mesenteric artery by arteriosclerosis had occurred at a point proximal to the origin of the right and middle colic arteries.

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THE AMBULATORY TREATMENT OF PEPTIC ULCER*

By Fletcher B. Taylor, M. D.
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Discussion *by Roy E. Thomas, M.D., Los Angeles; George Dock, M.D., Pasadena; J. Edward Harbinson, M.D., Woodland.*

PEPTIC ulcer can usually be benefited and can sometimes be cured by carefully following a medical program. Very few internists or surgeons consider this disease surgical as soon as diagnosed unless there is definite chronic obstruction, uncontrollable bleeding or the possibility of malignancy. Ulcer is frequent; treatments are many. Is it not surprising that there should be so little standardization in the method of such treatment? Even those men who specialize in this field of medicine have methods which seem at variance. May it not be that the success of apparently diverse methods really rests on their fundamental similarity? May I, then, consider a few of the principles common to most of the medical cures and, on behalf of the patient, eliminate some of the non-essential ones? The remarks to be made are impressions rather than convictions. They are limited to a study of approximately 150 ulcer patients while assisting Dr. W. C. Alvarez, and eighty others seen while practicing independently. The x-ray is the only impersonal check upon results, and I have not had re-examinations on more than half the patients seen. A picture of the ulcer, however, does not tell the whole story, and it is therefore necessary to judge results in part by inquiring into the patients' symptoms. This has been done and the impressions which follow are taken from such inquiry, as well as from x-ray observation where possible. Most of the patients, both medical and surgical, have improved. Over half the patients seen, followed and questioned have been symptom free for months or years. Of the patients whom I have followed independently, six had surgical success after medical failure. One had a perforation, two had cholecystitis with a duodenal ulcer at a point of contact between the duodenum and gall bladder, two were definitely obstructive, and one had large hemorrhages. One patient is a medical failure who should benefit by surgical care when he decides to accept it. He is the only patient whom I know to be in worse condition than when he started treatment. Fortunately I have seen but two or three ulcer deaths, each from perforation or hemorrhage in patients not seen before the emergency.

THE AMBULATORY TREATMENT OF PEPTIC ULCER

It is difficult to speak of the treatment of any disease without a spoken or implied correlation with etiology. Is there any reason to suppose that peptic ulcer rests upon a specific etiology? The several theories for the origin of ulcer testify to the lack of such and force us to consider multiple causes. Bamberger's clinic finds that ulcer is common among kitchen personnel, and Decker finds

* Read before the General Medicine Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

that dogs given pap at 62 degrees centigrade develop this lesion. Heiser finds that 97 per cent of his patients are either rapid eaters or hot-food eaters. Doctor Rosenow produces ulcers in experimental animals by the injection of streptococci. The major predisposition in an individual may be even more fundamental than these and may reside in a hereditary local tissue susceptibility. There follow a few minor factors not so open to experimental proof but which seem paramount in the waxing and waning of ulcer symptoms. The use of tobacco is one of these. Again, many a comfortable ulcer patient is reminded of his past trouble when he takes a cocktail. The use of condiments which sting the mucosa in the mouth may cause definite harm further along the tract. The advice of some friend who tells the patient to eat coarse food is sometimes the immediate reason for seeing a physician. One patient had a severe return of symptoms after a Sunday of sawing wood. One had a massive hemorrhage directly after jacking up an automobile. Others have mentioned recurrences after lifting or bending. Each of these carries its own lesson. Of all the factors which cannot be subjected to experimental proof, the one which is continually forcing our attention is what might be called the "psychic load." The incidence of ulcer almost suggests the incidence of angina pectoris or of hyperthyroidism, as Crile has remarked. These diseases occur in the ambitious, conscientious type of person who works primarily with the central nervous system. The ward has fewer of such patients than the office. One salesman has an exacerbation every time his territory is changed. One patient had his first symptom after the death of a relative. One patient is a bootlegger and his symptoms are extremely hard to control. Several are of the rapidly advancing "Young America" type who can scarcely wait until they have accumulated enough money to retire. Many patients speak of their malady as nervous indigestion. Psychic wear and tear is apparently communicated to the digestive tract as a definite trauma. In fact most of these accessory factors in the production and perpetuation of ulcer symptoms can be grouped under this term, "trauma." Standing in a more important position in etiology is the specific factor of infection. It must be borne in mind that both trauma and infection probably find pathological expression in the blood supply at the site of the ulcer. The pre-ulcer lesion is probably vascular. This is suggested by anatomical and physiological observations of Aschoff and of Reeves. Ischemia is conducive to tissue death. In what ways can the factors favoring destruction be made to face about and the phase of repair be furthered?

No one nowadays would leave tooth-root abscesses or definitely infected tonsils in the patient with any assurance. The patient is practically always told to avoid swallowing hot food and to avoid rapid eating. The elimination of tobacco, alcohol and condiments is popular enough to require no special emphasis. A few of the other measures do require emphasis. Many a patient feels that he will improve his condition by digging in his garden, sawing wood or doing setting-up exercises. Such persons should be warned against activities which require changes of muscle tension and changes of mechanical position through the waistline. The raw-food eaters have left a considerable impress upon the public and it is always necessary, therefore, to stress the avoidance of roughage.

Next consider for a moment that most important, although scientifically obscure item, "the psychic load." On the day that he is found to have ulcer, your patient must take charge of his own affairs. He must manage business and domestic matters so that he will not be incited to overdraw physically, mentally, or financially. This least specific item is important in curing many physical ills, but especially so in ulcer where the cost of overdrawing is pain which decreases the patient's earning power. If the patient will shape his affairs to suit his health, he is then much more certain of his medical objective and of his material objective as well, and no objective is tenable which is biologically destructive. If an ulcer perforates on the day that an important merger is completed, another cost item must be added.

One of the most certain elements in the relief of ulcer pain is frequent feeding. It is well for each feeding to contain fat, especially those feedings which are taken between the regular meals. Professor Carlson of Chicago has just given us a partial explanation for the efficacy of fatty feeding. The presence of fat discourages peristalsis. Carlson and his workers isolate a sleeve of stomach and replant it under the breast of the experimental animal. The two stumps at the site of removal are rejoined in order to continue the nourishment of the animal. The sleeve planted under the breast acquires its own blood supply locally. It continues to live and to exhibit peristalsis. In that position the observer can easily watch its behavior under the various chemical conditions which he may care to impose. The experimental sleeve is thus anatomically independent of the rest of the digestive tract, but has one physiological connection in that both depend upon one common circulation. When the animal is fed a fatty meal, peristalsis in the isolated sleeve ceases. Something has been absorbed from the fat and has been transmitted by way of the circulation to the experimental stomach, and having arrived there it depresses muscular activity. When the ulcer patient takes his 10 o'clock Lehnhartz, or Sippy mixture of cream and milk, his pain stops. If he or his doctor can anticipate the pain and move the feeding ahead he is usually prevented from having pain. No one can doubt that a relative immobilization favors healing. Alkalis are useful in controlling pain during the first days of treatment. I am not familiar with the elaborate plan of giving alkali quantitatively on the basis of acid figures obtained from gastric analysis. Excess alkali may do harm in persons with damaged kidneys. If, however, it be given as calcium carbonate, all of that salt not attacked by acid passes through the bowel without change and excess absorption is thus prevented.

The waves of activity in ulcer suggest the rise

and fall of a tuberculous process, but there is one very cheerful difference in the treatment program of these two diseases. Ulcer is more frequently recognized before hospitalization is necessary. I cannot agree with the hospitalization of a patient routinely when the diagnosis of ulcer is made. Under such circumstances the patient cannot avoid the feeling that when his hospital sentence is over he can make up for lost time in several ways. In a treatment which must extend at least over a period of one year, this attitude is destructive, the recurrence of ulcer symptoms is discouraging and too frequently surgery is welcomed on uncertain grounds. With the ulcer patient we have, in the making, a chronic digestive invalid, and a half-hearted medical effort combined with ill-advised surgical treatment too often confirms him to this invalidism.

Contrast with this the patient who signs away any objectives which may be subversive to health. He accepts a program which will be monotonous principally because he will continue to follow it many months after he has become symptom-free. He lives in comfort. He often forestalls surgery. By-products of his wisdom accrue in the form of sensible recreation and side interests. Many of such patients have been symptom free for months or years. Does one know that they are cured? No. That cannot be proven ordinarily. One patient with symptoms over a period of thirty years had a rapid heart failure. He had treated for ulcer for four months and had been free from symptoms for two months. At autopsy a coronary block was found. In the duodenum was a thick, posterior scar covered by a mucosa which was intact and of healthy appearance. He had followed a program carefully, even though symptom free.

There is no conflict between advocates of medical and surgical treatment of ulcer. These two specialties deal with fairly well-differentiated groups. Both the internist and the surgeon should insist upon a long and faithful medical program in the patient whose problem is not frankly surgical. Peptic ulcer is fundamentally a medical disease. If the patient is surgical he should revert to medical care after the surgical work is done. The surgeon who follows his postoperative results knows this, and the medical follow-up should not have to be initiated by the patient because of a return of symptoms. It should be part of the original plan. The surgical ulcer patient should accept operation as one step in the treatment.

SUMMARY

The successful treatment of ulcer rests on the consideration of multiple factors in etiology. Hereditary irritability of the digestive tract may be one of the important considerations. Foci of infection and the forces which find expression as duodenal traumata should be eradicated. The "psychic load" which the patient carries is one factor which separates the experimental ulcer in animal from the clinical ulcer in man. The patient must shape his program to the cure of his ulcer for a period of from one to two years. If successful, most of this time he will be symptom free. Surgery is one step in the cure of one group of ulcer patients. Peptic ulcer is essentially a medical disease in an ambulatory patient.

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DISCUSSION

ROY E. THOMAS, M. D. (1136 West Sixth Street, Los Angeles)—Whenever circumstances will permit I believe the ambulatory management of peptic ulcer should be preceded by a period of complete rest in bed in a hospital or at home, preferably the former. The duration of this rest period should be from two to four weeks, depending upon such factors as relief from pain and absence of occult blood in the stools.

The advantages of rest in bed are lessened caloric requirement and diminished peristalsis. The latter is accomplished partially by the application of heat to the epigastrium and the administration of atropin.

When the pathology of peptic ulcer is considered it would seem almost as essential, in the acute stage at least, to limit peristalsis in ulcer cases as to limit respiratory movement in pulmonary tuberculosis.

Also by bed rest the important etiological factor which Doctor Taylor calls "the psychic load" can best be eliminated.

Until more is known of the etiology of peptic ulcer I believe we shall obtain the best results by following up a preliminary period of bed rest with the regimen which Doctor Taylor has outlined, not for a few weeks or months, but as Doctor Taylor insists, for from one to two years.

By this treatment a fair percentage of ulcer cases can be cured and the great majority relieved for an indefinite time.

Recently I have been using calcium carbonate to the exclusion of other alkalies, as recommended by Lovenhart and Crandall, with apparent success. However, my experience has been too limited as yet to be of value.

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GEORGE DOCK, M. D. (Chamber of Commerce Building, Pasadena)—Internists cannot differ much from Doctor Taylor. His introductory remarks prepare one for what follows. Methods of treatment at the hands of experienced therapeutists are practically identical. We all agree, I think, in the importance of tracing out all the possible etiological factors including the very important ones dealing with the psychic life, and habits such as the use of tobacco and caffein-containing beverages. Treatment of associated conditions, especially focal infections, is usually carried out as it should be. The more we are obliged to make the gastric regimen ambulatory, the more, I think, we appreciate the value of rest in bed for a few weeks, four being a useful minimum. Doctor Taylor's use of diet including fat follows well-accepted practice. There are theoretical as well as clinical reasons for looking on fat as a depressor to HCL secretion. I find sugar useful for the same purpose. I by no means insist on repeated gastric analysis, essential as it is in the beginning of one's experience with diseases of the stomach. X-rays also need not be used frequently in the majority of cases. In intractable cases x-rays should be repeated, rather than titrations, though the latter may be resorted to. Two further principles seem to me clear. First that the ulcer patient must arrange his diet for the future accordingly. Second, that the diet and habits for this purpose can be arranged without any serious difficulty or self-denial.

❦

J. EDWARD HARBINSON, M. D. (Woodland Clinic, Woodland)—There are so many factors to be considered in the treatment of peptic ulcer that it is difficult to formulate definite rules of procedure. Fundamentally the physician should have a definite mental picture of the pathology, acquired by careful clinical and roentgenological investigation. Some of the important points to consider before prescribing treatment are: (1) Possibility of malignancy. (2) Question of pyloric obstruction. (3) History of previous hemorrhage. (4) Duration, site, size and depth of ulcer. (5)

General physical condition of the patient. (6) Financial status. (7) Personality.

Very often patients are advised as to medical or surgical treatment without careful consideration of the factors enumerated. The type of treatment should not depend on the specialty of the doctor consulted. Internists are often criticized because they continue to treat patients who have had no permanent results after repeated or long-continued course of treatment. Early ulcers are sometimes treated surgically. The choice of treatment often depends upon the economic status and personality of the individual.

There is considerable controversy regarding the treatment of gastric ulcer. The majority of surgeons believe that all ulcers on the gastric side should be treated surgically. Young people with early gastric ulcer may be placed on a medical regimen if we are able to follow them over a long period of time. If this is not possible they should be treated surgically. MacCarty's statistics on the development of carcinoma on the basis of gastric ulcer bear out this opinion.

Patients with duodenal or gastric ulcer with signs of pyloric obstruction; those with ulcers which have caused severe bleeding and those with ulcers which we believe have eroded through the muscularis should be treated surgically. Patients with ulcers not included in this category should be placed on a medical regimen.

Our routine medical treatment includes a month's preliminary rest in bed in the hospital with frequent feedings and alkalis, as outlined by Doctor Taylor. Periodic tubing, with gastric analysis, gives an estimate of the progress of gastric acidity. We have found calcium carbonate a very satisfactory alkali for routine use. It is not absorbed by the blood stream and therefore does not give rise to alkalosis, a condition sometimes produced by the administration of absorbable alkalis like soda bicarbonate.

Patients under this regimen have progressed more satisfactorily than those treated without preliminary rest in bed. Ambulatory patients require greater caloric intake and are therefore less likely to be satisfied with their diets. Activity increases peristalsis and invites physical and mental strain. We agree with the emphasis placed on the effect of the "psychic load." Exacerbation of symptoms and occasionally hemorrhages are apparently initiated by nervous shock. The same holds true for physical strain, and is one of the principal reasons why we believe patients should have preliminary bed rest.

After a month's treatment in a hospital, an ulcer is less likely to be affected by physical and nervous strain and the patient, having a more liberal diet, is more likely to follow instructions.

Foci of infection should be eliminated as soon as possible. A complicating chronic cholecystitis or chronic appendicitis may sometimes cause symptoms simulating an exacerbation of the ulcer syndrome. Cholecystography and palpation of the appendix under the fluoroscope with films of this area are diagnostic aids in ruling out these conditions.

A periodic follow-up should be made on all peptic ulcer patients. We endeavor to see our patients once a month or at least once every two months during the first year of treatment, emphasizing on each visit the value of continuing the prescribed regimen. Cooperation is best obtained by frequent contact. Many patients with peptic ulcer are apparently cured by medical treatment.

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Doctor Taylor (closing)—"Out of the conflict of opinion comes the truth" is a saying ascribed to Confucius, and in the above discussions there are views which probably will stand for a considerable time. The question of putting the patient to bed is of great interest to me. Some patients have to be put to bed in order to impose a practical control. Such a patient is frequently one who, because of willfulness or because of environmental pressure, does not cooperate completely. He is a very poor medical subject at the start and he is not much more promising as a surgical patient. Too often his bed rest represents a postponement of the real issue: to live in a manner compatible with health. In one group of patients the choice of treatment is between bed rest and surgery. In the rank and file of peptic ulcer patients, I believe that ambulatory treatment should be used first. Its failure gives the physician a valuable appraisal of the individual problem, success saves the patient time and expense.

BACTERIOLOGY OF RHEUMATIC ENDOCARDITIS*

By John C. Ruddock, M. D.
Los Angeles

Discussion *by William J. Kerr, M. D., San Francisco; Arthur Stanley Granger, M. D., Los Angeles; Eugene S. Kilgore, M. D., San Francisco.*

THE view that rheumatic fever is a disease entity, peculiar and different from other diseases, rests mainly upon clinical evidence. It is a disease characterized by the febrile state, by migratory inflammation of structures covered by serous membranes and by a peculiar inflammation of the myocardium.

AGE INCIDENCE OF RHEUMATIC FEVER

Cohn states that the average period from the beginning of the infection to the establishment of chronic valvular lesions is four years; from this point to the onset of heart failure about seven years; and from this point to death about four years, making a total of about fifteen years.

Now since the age period 5 to 15 years embraces the usual period of infection from rheumatic fever, the total course of the disease will have been run in patients prior to the ages 20 to 30 years. This is true only as representing average figures, for Cabot reports a case of sixty-three years' duration.

Endocarditis in infancy is rare, but may occur even during the first year of life, but at that age is usually of a septic rather than of a rheumatic type.

Although the average incidence of the onset of rheumatic heart disease is in the period 10 years to 20 years, we must cover the entire field in order to arrive at some conclusion in respect to the specific micro-organism causing the disease.

RÔLE OF INFECTIONS AS ETIOLOGIC FACTORS

Infections seem to play an important rôle as predisposing factors. Among these the chief is tonsillitis or sore throat. Influenza, pneumonia, scarlet fever, and other acute infectious diseases, apparently play a part in depressing the resistance of certain adults and children to rheumatic fever.

In recent years it has been assumed, rather than proved, that focal infection such as pyorrhea, apical abscesses about the teeth, chronic tonsillitis or hypertrophy of tonsils, is a direct factor in the etiology of all forms of rheumatism.

The green streptococcus, a normal inhabitant of the mouth, has also served to confuse the pic-

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ture, so that it is difficult to determine the exact causative importance of mouth infections.

SPECIFIC MICRO-ORGANISMS AS POSSIBLE CAUSATIVE FACTORS

In considering the etiologic agent in any disease it is necessary to decide whether the pathologic picture is a specific disease; and if accepted as such, then Koch's postulates should be fulfilled for any micro-organism that is construed to be the etiologic agent. Failing the demonstration of all of the postulates, it is necessary that a suspected micro-organism or virus be recovered from the majority of patients.

The claims of Achalme for a gram negative anerobic bacillus and of Singer for staphylococcus are merely of historic interest.

Between the years 1898 and 1927 there have appeared numerous reports of the recovery of streptococci from patients with rheumatic fever. As nearly as can be determined these streptococci corresponded with the type now called viridans. Menzer, Cole and others showed that similar lesions resulted from the inoculation of animals with streptococci recovered from sources other than rheumatic fever.

Bull refutes Rosenow's theory of the elective affinity for different strains of streptococci by inoculating a series of rabbits from cultures obtained from the tonsils of patients suffering from chorea, poliomyelitis, chronic hypertrophy of tonsils and many other diseases, and producing identical lesions in a second or control series, regardless of the source of the streptococci.

Cecil, Thalheimer and Rothchild and others have shown that the peculiar pathologic picture of rheumatic myocarditis is not produced in animals by the injection of living cultures of green streptococci. There is a destructive lesion of the joints that corresponds more closely to the lesions seen in chronic deforming arthritis than they do to the arthritis of acute rheumatic fever.

I need not discuss at this time the relationship between chorea and rheumatic fever, but that this relationship is more than casual cannot be denied by anyone, and the probability that they are merely different manifestations of the same disease is more than likely. White makes the assumption that rheumatic fever and subacute bacterial endocarditis are milder and severer forms respectively of one and the same disease. We have been accustomed to think of these two diseases as different clinical entities: in rheumatic fever the etiologic factor being unknown; in subacute bacterial endocarditis the streptococcus viridans being the common offender.

Clawson of the pathological department of the University of Minnesota has been able to grow streptococcus viridans from blood of 50 per cent of patients having rheumatic fever, and from 90 per cent of patients having subacute bacterial endocarditis. The isolation of the same organism with Koch's postulates observed is additional proof of the single etiologic origin of these two clinical types. The difference between the two clinical types is purely one of local reactivity of tissues. In one the proliferative predominates; in the other the exudative, *i. e.*, in rheumatic fever, verrucous thickening on the valves; in subacute, the softer vegetations on the valves. In subacute bacterial endocarditis the prognosis is hopeless. In rheumatic fever the prognosis is exceedingly good. We have the same organism present, and the same clinical picture, but not until evidence of embolic processes is obtained, can we tell that we are dealing with the grave form of endocarditis.

Holman's classification of streptococci isolated from the blood stream of patients with subacute bacterial endocarditis includes:

Streptococcus fecalis; streptococcus mitis; streptococcus salivarius; streptococcus non-hemolyticus, Type I; streptococcus non-hemolyticus, Type II; streptococcus non-hemolyticus, Type III.

Kreidler concludes that there is ground for the belief that endocarditis with its associated lesions is produced by streptococci, usually members of the viridans group. He isolated fourteen different strains of streptococci, thirteen of which produced green colonies on blood agar. In one exception a typical Beta hemolyser was isolated.

Hyman emphasizes the part influenza may play as an etiologic factor in the production of that form of endocarditis which produces the verrucous vegetations upon the thickened and inflamed valves, and which resemble the changes produced by streptococcus viridans as seen in rheumatic fever.

Libman and others have reported that the micro-organism isolated from the blood stream in from 90 to 95 per cent of patients is a non-hemolytic streptococcus often referred to as streptococcus viridans, while Bacillus influenza and occasionally other organisms are found in the remaining 5 or 10 per cent.

Cohn states that there is no general agreement as to which particular micro-organism is the cause of rheumatic fever, nor indeed whether a micro-organism is the cause at all; and that tonsillectomy does not materially influence the course of rheumatic fever, but merely lessens the morbidity of tonsillitis.

Small reports a micro-organism to which he has given the name Streptococcus cardio-arthritidis, obtained from the blood stream, throat and feces of children with rheumatic fever. He has been able to inject rabbits with this organism and produce the clinical picture of acute rheumatic fever. A therapeutic antitoxic serum has been prepared from this micro-organism, which, when administered to patients with rheumatic fever, has been followed by a very striking improvement of all symptoms. If this is true, one cannot at this time begin to appreciate the benefit which is likely to arise from an early application of specific treatment in the first attack of rheumatic fever in children.

The causative micro-organism in all instances has the common characteristic of low virulence, with no tendency even in its embolic manifestations, to pyogenic effects. Frequent observers have noted that the blood stream is often bacteria-free for long periods, which fact has often occasioned confusion in diagnosis.

CLASSIFICATIONS OF ENDOCARDITIS

Libman classifies endocarditis into four classes:

1. Bacterial—→90 per cent streptococcus non-hemolyticus
2. Rheumatic
3. Syphilitic } 10 per cent various organisms
4. Others

Thayer classifies endocarditis according to percentage of causative organisms:

	All Ages Per Cent
Staphylococcus albus	1
Staphylococcus aureus	13
Influenza	4
Gonococcus	11⅓
Pneumococcus	14
Streptococcus	57
Diphtheria	0.2

Hill classifies endocarditis according to severity:

Acute	Subacute	Chronic
Influenza	Streptococcus viridans	Vegetative endocarditis
Pneumococcus		Valvular heart lesions
Staphylococcus		Allied conditions
Diphtheria		Carditis
		Pericarditis

CONCLUSIONS

1. The etiologic factor in rheumatic fever is not clear. There is a division of opinion in regard to the organism causing the disease.

2. It has been assumed rather than proved that focal infection is a direct factor in the etiology of rheumatic fever.

3. The removal of tonsils reduces the morbidity of tonsillitis rather than the incidence of rheumatic fever.

4. Streptococcus cardio-arthritidis as reported by Small from cases of rheumatic fever fulfills most of Koch's postulates, but not all of them.

5. Many cases of endocarditis in early childhood are of unknown cause, and doubtless account for much of the chronic valvular disease of obscure etiology found in older children at school age and after, and in young adults. It is possible that the largest number of these doubtful cases result from unrecognized rheumatic infection, often mild, affecting the heart alone.

6. It is important that more work be done on this disease in order to determine definitely the infecting organism.

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DISCUSSION

WILLIAM J. KERR, M. D. (University of California Hospital, San Francisco)—The author has ably stated the present situation in respect to the bacteriology of endocarditis. Some more recent work by Doctor Birkhaug of the University of Rochester Medical School suggests that a non-hemolytic streptococcus with certain characteristics may be responsible for rheumatic fever.

Everyone who has followed the development of studies on rheumatic fever cannot but be impressed by the great variation in this disease. There does not seem to be any doubt that patients may have this infection without rheumatism, or without involvement of other tissue in the body than the joints. There may be chorea, of course, without involvement of joints or the heart, and there may be involvement of the heart without any of the other manifestations. I have come to look upon the disease as one of protean manifestation, as outlined by the author, with a great predilection for involvement of the serous membranes everywhere and with particular involvement of the heart muscle characterized by the formation of Aschoff bodies. The heart valves are involved by a process in the valves which is located around the capillaries of the valve and associated with exudation and proliferation. The essential pathological lesion is an Aschoff body with a great variation in the amount of exudation in the different tissues. Personally, I feel that the chief clinical manifestations of the disease in the early stages are those due to a soluble toxin and that there is very little evidence that any of the lesions are produced by a localization of bacteria. Even the changes in the heart valves may be produced by toxic substances brought to them by the blood stream which causes a tremendous exudation with secondary necrosis of the surface of the valves where the leaflets come in contact with each other. Then follows proliferation and organization, as suggested by the work of Homer Swift.

It seems to me that the problem must be attacked along lines similar to those followed in the studies on scarlet fever and erysipelas. The greatest advance that could be achieved in medicine today would be the absolute determination of the specific organism, or organisms, producing rheumatic fever so that the disease may be prevented or immunization may be quickly brought about at the beginning of the disease by antiserum.

When we come to the study of rheumatic fever and its possible relationship to subacute bacterial endocarditis we find ourselves on somewhat difficult ground. The essential difference between these two diseases, as I see it, is that rheumatic fever shows a great preponderance of toxic manifestations. The lack of embolism I believe is due to the fact that the lesions are within the valves. In subacute bacterial endocarditis the process has become extended to the surfaces of the valves with thrombus formation and growth of bacteria on the outside of the valve. The clinical picture then is usually one of sepsis with a great tendency to embolism. In the future we may become convinced that they are really one and the same disease with differences attributable to the stage in which observations are made. However, in subacute bacterial endocarditis the organism described is usually the streptococcus viridans or the hemolytic streptococcus alpha of Brown. The tendency of the subacute cases to show evidence of healing in the lesions has been well described by Libman, who also mentions cases that seem to fall in somewhere between the rheumatic group and the subacute group. In the more acute cases of endocarditis, such as those caused by the gonococcus, meningococcus, Pfeiffer's bacillus, typhoid bacillus, and staphylococcus, there is an entirely different clinical picture, usually leading to an early death with embolism or sepsis.

My experience coincides with that of the author concerning the age incidence and the duration of time before the patient becomes incapacitated. The duration from the time of the original infection of the heart to disability of course depends a good deal on the number of valves involved and the extent of myocardial and pericardial involvement. I have seen a good many patients who have their primary infection apparently late in life, and I find that these also run more or less true to form; that is, they develop their disability in from eight to fifteen years after the original attack. We should not rule out rheumatic infection entirely in a person past middle life. Personally I have seen one patient who had rheumatic fever with heart involvement in early childhood and who died fifty years later of slowly advancing heart failure resulting from the early disease of the aortic valve.

ARTHUR STANLEY GRANGER, M. D. (2007 Wilshire Boulevard, Los Angeles)—Joint involvement and valvular involvement in acute rheumatic fever I have always looked upon as secondary manifestations of an infection. Likewise there are many other secondary manifestations of this same infection. Because it never has been definitely shown that there is appreciably less rheumatism and less endocarditis follow-

ing tonsillectomy, our lines of endeavor should be directed toward discovering, if possible, some specific organism which may be responsible for these conditions and its various portals of entry. We see so many cases of myocardial involvement in the third and fourth decades which show for the first time signs of heart failure but which we know have begun early in life following so-called acute inflammatory rheumatism, that it would be extremely worth while, were we able to institute treatment at the beginning of the infection, and to pursue some means directed toward the prevention of the endocarditis. Such a large percentage of all heart disease begins on a rheumatic basis that I feel insufficient thought and investigative work has been given to this very important phase of the subject.

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Eugene S. Kilgore, M. D. (490 Post Street, San Francisco)—Doctor Ruddock's paper is an excellent summary of the present paucity of knowledge regarding rheumatic fever, a paucity which is astonishing and rather humiliating in view of the amount of effort which has been spent upon elucidation of the problem. The suggestion of a common etiology with subacute bacterial endocarditis is interesting in relation to certain geographical considerations. Typical rheumatic fever and chorea are considerably less common in California and the southern states than in New England and New York. And yet, though no adequate survey has been made, many of us feel that the late stages of rheumatic heart disease are observed about as commonly here as elsewhere. Sometimes we find them in the incipient stage following a simple sore throat but with no joint or nervous system involvement. If this impression is correct it suggests that climate modifies the manifestations of the disease rather than its frequency of occurrence. And this in turn makes easier the conception of two such different clinical and pathological pictures as rheumatic fever and subacute bacterial endocarditis being essentially the same disease.

INSULIN AND INTRAVENOUS GLUCOSE INJECTIONS—FOR VOMITING OF PREGNANCY

CASE REPORTS

By Charles Harold Lewis, M. D.
Santa Monica

Discussion *by J. Morris Slemons, M. D., Los Angeles; Cavins D. Hart, M. D., San Francisco; Emil Krahulik, M. D., Los Angeles.*

IN March, 1924, Thalhimer[1] reported three cases suffering from severe vomiting of pregnancy and having marked ketosis which were promtly relieved by the intravenous injection of glucose. He used approximately one unit of insulin to two or three grams of glucose and varied the amount of glucose according to the individual case. His previous experience led him to believe that the intravenous injection of glucose alone, produced only slight improvement in patients with postoperative, non-diabetic acidosis (a condition which he considered comparable to the vomiting of pregnancy), and he explained this as due to the impairment of the mechanism of carbohydrate metabolism. Insulin causes rapid utilization of glucose in the body. Hence, the improvement when insulin is used with the glucose injection, and the lack of improvement or only slight benefit which is noted if glucose is used alone. In this article Thalhimer advised the use of this method only for patients who were not relieved by other methods.

OTHER CASE REPORTS IN LITERATURE

In August, 1924, Thalhimer[2] reported five additional cases with similar results, but stated "only those cases should be treated with this method which have a severe acidosis." He suggested that pregnancy itself may interfere with carbohydrate metabolism mechanism, as well as the starvation which is produced from vomiting. Later Thalhimer reported two other cases with similar and more striking results.

Titus, Hoffman, and Givens[3] and Duncan and Harding,[4] working independently, recorded excellent results from the administration of glucose alone. Thalhimer contends that if insulin is used with the glucose, improvement is much more rapid. Doctor Sansum of Santa Barbara at the last meeting of the California Medical Association reported a case with marked improvement in which he gave insulin alone without glucose.

Referring again to the work of Titus,[5] he reported 328 cases which were treated by means of high carbohydrate feeding or intravenous glucose injections. He used one unit of insulin intravenously to five of glucose which was considered to be practically the same as Thalhimer's method, as the latter gave insulin subcutaneously. Titus explained the action of these substances as follows: "To offer a homely simile the injection of glucose alone is like pine fuel to a furnace which is burned low at the same time storing some in the fuel bin, whereas to add insulin to the glucose is like pouring kerosene on the coal to make it burn faster.

"If these views are correct the use of insulin with intravenous injections of glucose is contraindicated in toxic vomiting of pregnancy and all other acidoses, because storage of sugar in the liver and not combustion in muscles is the effect desired."

The important conclusions which Titus formed in this article were:

First: Less than 50 to 75 grams of glucose at a dose do not give desired results.

Second: Hypertonic solutions (25 per cent) give best results.

Third: Single injections are better than a continuous flow, but may have to be repeated three or four times daily.

Fourth: Pregnancy toxemia and starvation acidosis are not identical.

E. L. King[6] in May 8, 1926, reported seven cases of the severe type and in four of them the results were very striking. From these seven cases King drew the following conclusions:

First: If there was any response to the treatment it was immediate.

Second: One patient was improved by use of the duodenal tube after glucose and insulin had failed.

Third: Repeated punctures of the veins soon resulted in thromboses.

Fourth: The method is an improvement over

former methods, and the use of insulin with glucose gives more prompt results.

By way of contrast to these enthusiastic and favorable reports it is of interest to note that MacLeod and Campbell [7] dismissed the subject by saying, "Use of insulin in pernicious vomiting of pregnancy is in our experience unnecessary."

CASE REPORTS

The cases here reported represent consecutive cases of hyperemesis gravidarum met with in private practice without respect to their severity. My purpose was to ascertain whether or not the use of this treatment was applicable to all pregnancy patients having nausea and vomiting, either mild or severe, and if not to all, then to what types:

Case 1—Mrs. E. L., age 19, Para I, was admitted to the hospital four weeks before expected confinement. There was a history of little nausea and vomiting during the first part of her pregnancy, but during the four weeks previous to her admission she had vomited incessantly. After two days' stay in the hospital, during which time she was given soda and glucose solutions per rectum without improvement, she was given 300 cc. of 10 per cent glucose solution intravenously and fifteen units of U 20 insulin subcutaneously. About two hours and a half after these injections the patient was able to take water without vomiting, and two hours later ate dinner without difficulty. She continued to take food regularly for the next three days and was then discharged from the hospital, and continued to term without further complication. This case had resisted other methods of treatment such as frequent and forced feedings, use of corpus luteum, ovarian extract, rectal instillation of bromids, chloral hydrate, and the use of Murphy drip.

Case 2—Mrs. E. G., age 20, Para I, in her seventh week of pregnancy reported nausea and vomiting throughout the day. Immediately after one injection of 20 cc. of 50 per cent glucose solution containing eight units of U 40 insulin she was much improved, and two weeks later reported only an occasional nausea. She had no reaction and was apparently much benefited.

Case 3—Mrs. E. P., age 26, Para I, had complained of considerable nausea and vomiting, with headache, both night and day, and independent of taking food. Rectal instillation of bromid, daily injections of corpus luteum, and ovarian extract were tried without effect. After one injection of 20 cc. of 50 per cent glucose with eight units of insulin U 10, the patient was improved, and after a second injection was relieved of these symptoms for three weeks. She was then nauseated for a day, but improved without treatment. In this patient the improvement may not have been due to the treatment, since it was administered at the time when spontaneous improvement could have taken place.

Case 4—Mrs. S. G., age 22, Para II, previous pregnancy and delivery normal. Patient received one injection of glucose and insulin with slight improvement, but refused further injections because she did not feel that her symptoms were severe enough to warrant her being put to the inconvenience involved in the use of a hypodermic, as she was rather sensitive to an injection and objected to venipuncture.

Case 5—Mrs. H. L., age 31, Para II, had preclampsic toxemia during her first pregnancy, five years before. Also had considerable difficulty during first trimester of previous pregnancy with nausea and vomiting. At eighth week of pregnancy complained of marked nausea without vomiting. One injection consisting of 20 cc. of 50 per cent glucose and three units of insulin, U 40 was given. Patient improved immediately and did not complain for eight days. She then returned and the injection was repeated, with improvement which lasted for five days. After the third treatment the patient reported that she felt well and had no nausea. In this patient the symptoms were very mild and comparable to the so-called physiological morning sickness of which 50 per cent of pregnant women complain.

Case 6—Mrs. G. T., age 35, Para IV. In her three previous pregnancies this patient had suffered from a severe type of hyperemesis gravidarum. She had been warned by her physician to avoid future pregnancies. Communications from the physician who had attended her during the three previous pregnancies stated that if her present pregnancy "proved as stormy as previous ones, termination would be indicated." However, the patient was willing to try any method of treatment in order to carry out the pregnancy, and the use of glucose and insulin was instituted. After three injections of 20 cc. of 50 per cent solution containing three units each of insulin U 40, the patient seemed much improved. Three days later she went for a long automobile trip, and nausea and vomiting returned. As a matter of experiment two injections of glucose were given on successive days without insulin. The patient vomited immediately after the second injection and also on the following day, at which time a sixth injection of glucose with three units of insulin was given. This was followed by the seventh and eighth injection. Vomiting grew progressively worse and patient was sent to a hospital. After one intravenous injection of 1000 cc. of 10 per cent glucose, and a subcutaneous injection of 1 cc. of U 40 insulin both at the beginning and close of the intravenous injection, the patient was much improved and after twenty-four hours in the hospital was allowed to go home, where she remained without return of symptoms for ten days. At this time the symptoms recurred in severe form. By now the veins had become thrombotic, and difficulty was experienced in making the injection. Patient objected to the treatment, but was kept in bed and the use of bromide continued. She remained fairly well until three weeks later, when the tenth week of pregnancy was reached. At that time the vomiting again became severe. Upon being readmitted to the hospital the patient asked that some other treatment than intravenous therapy be given. Accordingly she was given alternately 1 cc. of ovarian extract and corpus luteum extract every three hours during the first forty-eight hours. The dosage was then reduced gradually until at the end of the seventh day she received 1 cc. daily. At this time she was able to retain all her food and was again discharged from the hospital. This patient seemed to be one in whom glucose had very little, if any, effect, and if it produced improvement it was only transitory. It is problematical as to whether the ovarian extract and corpus luteum produced real benefit, inasmuch as they were used so near the twelfth week of pregnancy.

Case 7—Mrs. M. C., age 20, Para I, complained of both nausea and vomiting, which was considerably relieved by one injection of glucose and insulin. One month later, however, she aborted spontaneously and completely, the products of conception having the appearance of an hydatidiform mole. Patient is still under observation and is apparently well.

Case 8—Mrs. H. A., age 25, Para II. This patient had suffered much from nausea and vomiting during her previous pregnancy and at term was delivered of a normal but stillborn child, which the mother thought had been injured by forceps during delivery. She complained of marked nausea and vomiting, which was completely relieved by one injection of glucose and insulin, and she had no further difficulty with either nausea or vomiting during her pregnancy.

Case 9—Mrs. V. C., age 29, Para I, reported nausea with occasional vomiting. This patient was relieved by one injection of glucose and insulin and had no further difficulty.

Case 10—Mrs. R. G., age 21, Para II, suffered from nausea and vomiting during her first pregnancy, and had never felt well since her confinement two years ago. Felt tired and had occasional nausea and vomiting. After one injection of glucose and insulin patient had no nausea for ten days. The treatment was re-

peated and subsequently there was no return of symptoms.

Case 11—Mrs. H. J., age 30, Para III, had nausea and vomiting during the first trimester of two previous pregnancies. Second pregnancy resulted in spontaneous abortion at three months which was thought by the patient to have been due to retroversion. Severe nausea continued after four injections of glucose and insulin, but became less for six days after the fifth injection. After the sixth and seventh injections the patient experienced a queer feeling with some nervousness after her return to her home and accordingly treatment was discontinued, the insulin being looked upon as having been responsible for the reaction. As the nausea and vomiting were not of the severe type patient was treated subsequently by regulation of habits and diet, and symptoms disappeared after the fifteenth week of pregnancy. This patient was the only one of the series in whom there was any reaction.

Case 12—Mrs. G. Q., age 29, Para II. First pregnancy resulted in stillbirth. During the first trimester of first pregnancy this patient had marked nausea and vomiting, and occasionally throughout the remainder of her pregnancy. After three injections of glucose and insulin the patient reported marked improvement and had no return of symptoms for three weeks. At this time the nausea returned and a fourth injection was given. Afterward the patient experienced nausea only once and had no further vomiting.

COMMENT

This series of cases differs from those reported by other writers in that only two of the patients were of the severe type of hyperemesis gravidarum. The others were mild cases, but were sufficiently severe not to have been improved by ordinary methods of treatment, such as regulation of diet, habits, hygiene, elimination, and the administration of ovarian extract by mouth or of ovarian extract and corpus luteum hypodermically.

My thought in using this method in consecutive cases, without respect to laboratory findings, was to learn whether or not this treatment might have an application to all cases of nausea and vomiting during pregnancy, whether mild or severe.

During the time that these patients were treated I also had one patient who had such a marked retroversion that I felt that it would be folly to endeavor to use any other treatment than reposition of the uterus and temporary use of a pessary. The patient reported very prompt relief from symptoms. In that patient the method of treatment under discussion would not have been of any value.

CONCLUSIONS

From my experience I submit the following conclusions:

1. The use of glucose and insulin offers marked benefit in certain patients suffering from nausea and vomiting of pregnancy.

2. In properly selected patients 20 cc. of 50 per cent glucose solution containing five units of insulin may be given intravenously, as an office procedure.

3. Some cases are improved and relieved of symptoms when they have resisted all other recognized forms of treatment.

4. This type of treatment is only indicated for patients in which there is a derangement of carbohydrate metabolism, either from the pregnancy itself or from the result of continuous vomiting. Other forms of hyperemesis in which a different etiology obtains should be treated by appropriate methods.

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DISCUSSION

J. Morris Slemons, M. D. (819 Pacific Mutual Building, Los Angeles)—Of late a great deal has been said about the cause of and the cure for the nausea and vomiting incident to the early months of pregnancy. A degree of enthusiasm, sometimes not too modest, entertained by advocates of one form of treatment or another, has not been shared by other practitioners who put to test the measures so confidently recommended. Cases of pernicious vomiting continue to vex us; and occasionally they resist treatment of every description, requiring ultimately a radical and regrettable step—the termination of the pregnancy. The studies of Doctor Lewis, therefore, are not untimely. His unbiased, critical and sometimes skeptical attitude toward his results is noteworthy and commendable. His report provides a welcome example of research conducted effectively in connection with private practice.

The usefulness of glucose in certain cases of vomiting of pregnancy has been definitely established; but opinions differ regarding the benefit derived from the addition of insulin. At present the weight of authority favors its omission. This conclusion was reached by Titus, a pioneer in the introduction of the method, whose broad experience has furnished the material for several papers describing very satisfactory results. The omission of insulin is favored also by MacLeod and Campbell. Their recommendation becomes the more impressive because any prejudice they might have would favor its use. Finally Dieckmann and Crossen of Washington University, St. Louis, where glucose with insulin was first used in cases of vomiting of pregnancy, advocate the omission of insulin except in cases where a large quantity of glucose is administered. The employment of glucose with insulin, they declare, is generally unnecessary; and, furthermore, an element of danger may be associated with it.

The glucose, of course, is intended to provide a supply of glycogen for an organism stripped of this reserve material. The administration of small doses will not go far in this direction. When its use is indicated, glucose is required in large dosage by patients who are ill and in need of hospital care. If disturbed by the vomiting of pregnancy only to a slight degree and therefore able to visit a doctor's office, a patient probably would find relief with equal promptness by

the adoption of a suitable dietary regimen and the employment of therapeutic measures somewhat simpler than the intravenous administration of glucose.

❦

Cavins Deter Hart, M. D. (380 Post Street, San Francisco)—Doctor Lewis is to be commended for his research in a subject that today is being so extensively investigated in the attempt to relieve the pregnant patient of one of her most distressing complications.

My experience in the use of glucose with insulin in the vomiting of pregnancy has been limited, as I have felt that we were dealing with a deficiency in the carbohydrates rather than with an inability of the non-diabetic patient to utilize the sugars. Titus has been one of the early advocates of this theory and finds no use for the insulin in the early or late toxemias of pregnancy except where large amounts of glucose are used.

There are two objections to the intravenous use of glucose in the mild vomiting cases. The first objection is that most of these cases will respond to rest and proper dietary routine. The education of the young women of today is helping a great deal, as they no longer consider nausea and vomiting necessary. They consult their medical advisers early, and we no longer see so many neglected severe cases. The second objection is the destruction of the veins by thrombosis which so often occurs after glucose therapy.

In the severe cases of vomiting in pregnancy intravenous glucose therapy is indicated. Titus does not use insulin in these cases. Dieckmann and Crossen use it only in cases where large quantities of glucose are given intravenously. The last two investigators feel that large quantities of fluids are most essential. They recommend 1500 to 3000 cc. of Ringer's solution intravenously and 1000 to 2000 cc. of 10 per cent glucose intravenously in a period of twenty-four hours. The fluids are used to establish diuresis and the glucose is given for food.

My most satisfactory results in the severe cases have been obtained by giving a liter of 10 per cent glucose twice daily until diuresis is well established and the vomiting has ceased.

❦

Emil Krahulik, M. D. (1680 Vine Street, Los Angeles)—Nausea and vomiting during the first half of pregnancy divides, according to severity, into three classes: (1) mild, which responds rather promptly to suggestion and a hygienic and dietary regimen; (2) moderately severe; and (3) severe.

Patients coming under the third classification are sufficiently ill to warrant hospitalization and their management is not difficult to outline, whatever its success. Class two is a group of very uncomfortable people to whom we do not bring very much relief. They are able, with effort, to retain food, but they vomit every day and are nauseated almost all of the time. They are not considered ill enough to be confined to bed, or even to require nursing service and yet they are almost totally incapacitated. The satisfactory treatment of the severe cases requires special nursing and entails considerable expense. Therefore it is not practical treatment for the second group.

Doctor Lewis made his suggestion to me some time ago. I have given a daily intravenous injection of 20 cc. of a 50 per cent glucose solution, without insulin, to three patients of the moderately severe type. Instead of being given in the office the injection was given at home, with the patient in bed during the course of the treatment and for one day previously on the usual hygienic and dietary routine. Each received six injections. Encouraging results were not noted. In the last patient the course was repeated using 40 cc. of the glucose solution, and a subcutaneous injection of ten units of insulin. The patient is now three and one-half months pregnant and continues to be nauseated, but vomits less frequently. The procedure is easy and deserves further trials.

In severe hospital cases I have been giving 1000 cc. of a 5 per cent glucose solution, without insulin, by hypodermoclysis with some success. The only advantage of the intravenous method is that more concentrated solutions may be given. Administration by either method must be slow.

❦

Doctor Lewis (closing)—The discussions of Doctors Slemons, Hart, and Krahulik are exceedingly helpful, and they have touched upon some of the most important considerations of this subject. Since writing the above article I have used this form of treatment in eight other patients and uniformly with good results, except in two patients where the injections were given early and in which there was found no evidence of acidosis. At present I am making the urine tests for acetone and diacetic acids on all such patients and do not institute the insulin and glucose treatment unless these substances are present in the urine. I am more than ever convinced that improvement cannot be expected (as I stated in the last paragraph of my paper) unless there is derangement of carbohydrate metabolism and some evidence of at least beginning acidosis.

RENAL SURGERY: ITS PITFALLS AND COMPLICATIONS*

By Charles P. Mathé, M. D.
San Francisco

Discussion *by James R. Dillon, M. D., San Francisco; Frank Hinman, M. D., San Francisco; Guy Manson, M. D., Fresno.*

YEARS ago operations upon the kidney were accompanied by an unusually large mortality and often followed by unpleasant complications. An intelligent study and interpretation of renal function has lowered the mortality. Painstaking postoperative care has reduced the number of complications. An analysis of these complications with the purpose of preventing them or of lowering their frequency is of great importance. In reviewing 370 operative renal cases at St. Mary's Hospital, dating back to the fire of 1906, I am enumerating the complications and pitfalls encountered with the purpose of improving the technique in order that such complications may be prevented in the future. The 370 cases reported herein have been consecutive, occurring among several thousand cases seen with kidney lesions. Many which apparently seemed to be operative cases were prevented reaching the operative stage by proper preparation and care. Two hundred and ninety-three of the cases enumerated were operated upon by the author and seventy-seven by other surgeons.

COMPLICATIONS OF RENAL SURGERY

The more common complications encountered in the above series of cases were: shock, 10; hemorrhage, 8; postoperative hemorrhage, 2; cardiac complication, 4; phlebitis, 9; embolus formation, none; fistula discharging urine and pus, 6; anuria, 2; peritonitis, none; pneumonia, 1; pulmonary edema, none; septicemia, 1; cervical neuritis, 1; and abscess of the kidney overlooked at time of operation, 4.

Shock—Surgical shock or exhaustion occurred more often in patients who lost a large amount of blood, after the difficult removal of a large adherent kidney. It was also caused by preoperative fear, worry or insomnia, and was readily rec-

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* From the Department of Urology, St. Mary's Hospital.

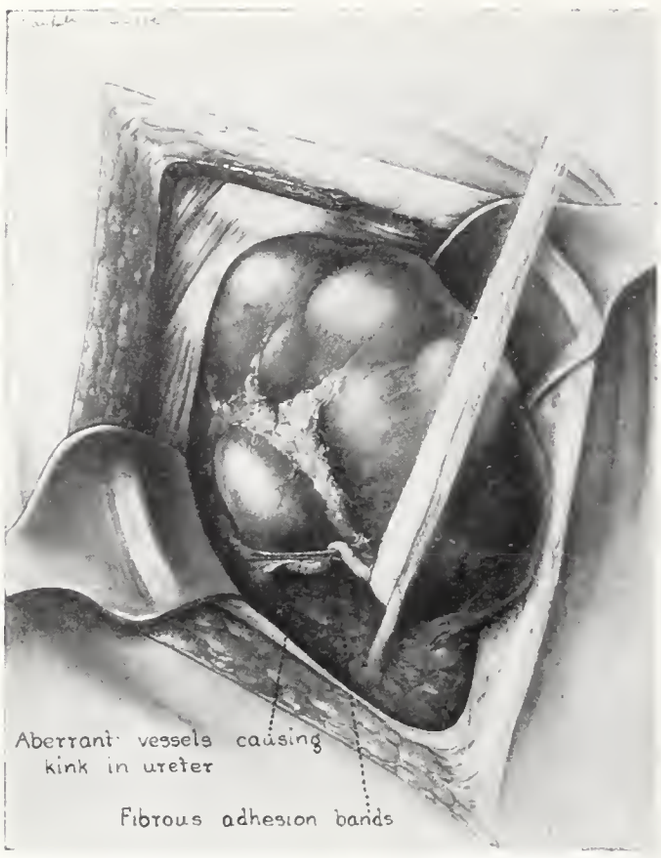

Plate I—Exposure of the lower pole and of an accessory artery obstructing the ureter through careful dissection of the perirenal fat.

ognized by the pulse rate increasing above 120, acceleration of the respiratory rate, a lowering of the blood pressure, pallor, cold extremities, and a profuse sweat. In order to prevent shock, nervous, excitable patients should be encouraged. It is most important that their moral courage be kept high, therefore the gravity and the time of their operations should never be divulged. A difficult nephrectomy can sometimes be made easier by employing the subcapsular method or by removing the kidney in pieces. Rough handling of tissues, excessive retraction and loss of blood can often be avoided by sufficient enlargement of the incision that one can work with ease. When shock occurs during the operation an intravenous infusion of 500 to 1000 cc. of 10 per cent glucose solution is given immediately. For every 3 gm. of injected glucose one unit of insulin is added. (Fisher and Snell). Digalin, 1 cc. every four hours, and caffein 0.12 gm. every four hours are alternately given to support the cardiac system. The operation is terminated as quickly as possible, leaving clamps on the renal pedicle if necessary and closing the wound in one layer.

Hemorrhage—The question of hemorrhage is of great importance. The bleeding time of all patients should be ascertained, and if prolonged they should have previous preparation through the administration of calcium lactate by mouth, calcium chlorid intravenously, or by a transfusion when necessary. During the operation all bleeding points should be securely ligated. The loss of blood should particularly be prevented in children. In opening the kidney parenchyma a silver wire should be employed in place of the hemorrhage-producing scalpel. By the aid of a blunt needle the wire can be slipped in between the larger trunks of the renal vessels, and by a to-and-fro movement the finer ramifications can be actually separated so that only the smaller terminal vessels are severed. During this procedure a rubber clamp should have been previously applied to the pedicle to lessen hemorrhage. We have found a double layer of mattress sutures the best in closing the kidney. It is often our custom to include fat in these sutures to prevent postoperative hemorrhage according to the method of Kolescher and Koll. Whenever possible stones should be removed by a pyelotomy incision, which is practically bloodless if one is careful not to injure, as emphasized by Eisendrath, the posterior artery to the pelvis. One is often surprised at the size of the stone that can be removed in this manner (see plate V). In delivering and freeing the kidney it is best to employ blunt dissection and to be watchful for aberrant vessels, particularly at the upper and lower pole. The pulsating aberrant artery can be readily palpated if a reasonable amount of care is exercised. However, difficulty is often experienced in distinguishing the collapsible aberrant vein from the surrounding fascia. In delivering the kidney, therefore, one should carefully dissect it free from the perirenal fat and fascia and every adhesion should be carefully ligated and investigated under direct vision. Young in discussing Eisendrath's masterful paper on accessory renal vessels delivered before the American Urological Association in 1920, stated that he accidentally cut an aberrant artery of the upper pole in operating on a case of hydronephrosis. The bleeding was stopped by ligation, but the patient ultimately died. It was found afterward that, in attempting to catch the renal vessel that had slipped away, the end of the pancreas had been injured. The integrity of the renal pedicle must be assured. When possible the individual vessels are doubly tied with No. 2 or 3 chromic catgut. If the vessels are matted together and cannot be separated without danger of nicking the vein, they should be tied proximal and distal to the clamp and the stump transfixed. When the pedicle is too short and there is danger of injuring the vena cava, one should not hesitate to leave the clamp *in situ*. In six nephrectomies we were obliged to leave the clamp in place on the renal pedicle and no hemorrhage resulted when it was removed ninety-six hours later.

Phlebitis—Phlebitis occurred in 2.8 per cent of this series of cases. It usually occurs in the internal saphenous vein and does not have predilection for the side of the body on which the kidney is operated. The treatment consists of absolute rest, repeated hot boric compresses, and elevation of the affected member. Quinin given either by mouth or intravenously hastened recovery. Embolus formation did not follow any operation on the kidney. Fatal septicemia due to staphylococcus occurred in one case. A calcified cortical abscess was resected and the kidney suspended in a male, aged 57. Following the operation the pulse and respirations became accelerated, the temperature increased to 102-103 degrees F. accompanied

by acute dilatation of the stomach. In spite of all measures taken to combat these complications the patient became weaker and expired six days after the intervention. As previously emphasized by the author in an article on carbuncle of the kidney, excision and incision of renal abscess and carbuncle have a higher mortality and are followed by more complications than nephrectomy. In performing the latter there is less likelihood of forcing the more or less localized bacteria into the blood stream in large numbers, thus favoring generalized septicemia.

Fistulae—Fistulae discharging urine and pus occurred more frequently prior to 1915 before which time complete urological investigations did not usually antedate the renal operation. It was in most instances due to failure of elimination or back pressure in the lower ureter prior to the operation caused by a stone, stricture or kink of the ureter. In the thirty-two cases of nephrectomy for tuberculosis the wound healed in the average time of ten weeks, whereas in nephrectomy for pyonephrosis the average was three weeks. It was found necessary to repair surgically two broken-down tuberculous wounds. Whenever available the wound is given daily exposures to the morning sunlight, ranging from twenty minutes to three hours in gradually increasing doses. On cloudy days the alpine light was substituted for the sun rays. In highly infected cases the wound is washed out with mercurochrome 1 : 2000. Excessive granulation tissue is curetted away and the base cauterized with nitrate of silver crystals. The injection of a paste consisting of bismuth nitrate 1 gm., iodoform 2 gm., and petrolatum 1 gm., will frequently cause stubborn, reluctant wounds to heal.

Infection of the Renal Fossa—Infection of the renal fossa and perirenal space frequently follows the removal of large pyonephrotic kidneys in which the perirenal tissue was involved. It is not uncommon for these and tuberculous wounds to break down at the anterior angle, or in the middle, about two or three weeks after the operation. Bidgood has recently reported sixteen such cases from the Johns Hopkins Hospital. Thirteen per cent of the tuberculous nephrectomy wounds in this series broke down. Two cases required excision of tuberculous granulation tissue. Another required curettage of the wound, injection of bismuth iodoform paste, and repeated sun exposures before closure was obtained. Infection invariably follows those cases of extravasation of urine. It is very important to drain these cases at the lower as well as the upper end of the incision. In two cases of urinary extravasation following a traumatic and a spontaneous rupture of the kidney it was found necessary later to open up the renal fossa for further drainage which resulted in both cases in a hernia at the site of the incision. Wider primary drainage would probably have prevented this. Early nephrectomy in the acute surgical kidney presenting multiple abscesses, or in kidney carbuncle, not only prevents the infection from involving the other kidney, but arrests the involvement of the perirenal space.

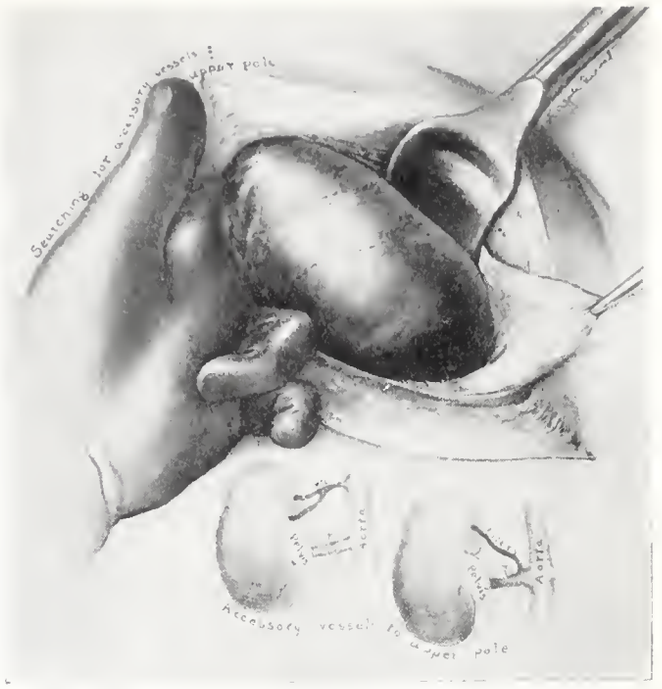

Plate II—When there is difficulty in delivering the upper pole, one should palpate the surrounding tissues for accessory vessels. Accessory veins being collapsible can only be identified by visual exposure of the kidney.

Uremia—Uremia which was the dreaded aftermath of kidney surgery is now a rare complication, thanks to the intelligent employment of the tests of renal function at our command. The increase in the nitrogenous waste products in the blood warns us of the poor operative risk. The phenolsulphonephthalein, indigo carmin and urea function tests assure us that the opposite kidney can carry on the work of elimination of urine during and after the operation. We recently lost a patient from uremia in which the tests ordinarily employed failed us. A nephrectomy was performed on a woman, age 65, for a large infected hydronephrosis secondary to ptosis and to an aberrant vessel. The blood urea was 20 mg. per 100 cc., creatinin 1.5 mg. per 100 cc., and non-protein nitrogen 28 mg. per 100 cc. The phthalein collected in one-half hour from the opposite kidney measured 20 per cent and the urea 15 gms. per liter. Nitrous oxid gas anesthesia was used and the nephrectomy was a particularly easy one. Following the operation the symptoms of uremia and acidosis, accompanied by anuria and acetonuria, gradually came on and, in spite of all the measures taken to combat them, the patient succumbed at the end of five days. Unfortunately an autopsy was refused. Squier reported a similar death, but in his case the acidosis and acetonuria followed the nephrectomy and was thought to be due to the chloroform anesthesia used.

Anuria—Anuria can be considered as a complication that can be prevented. It is our practice to force fluids for a number of days prior to the operation. On the preceding day at least three liters of water are given by mouth. If this has been overlooked the surgeon should at once postpone the operation. When necessary one liter of sodium bicarbonate and glucose is given by the Murphy drip following the operation. If this is not retained fluids are given by hyperdermoclysis

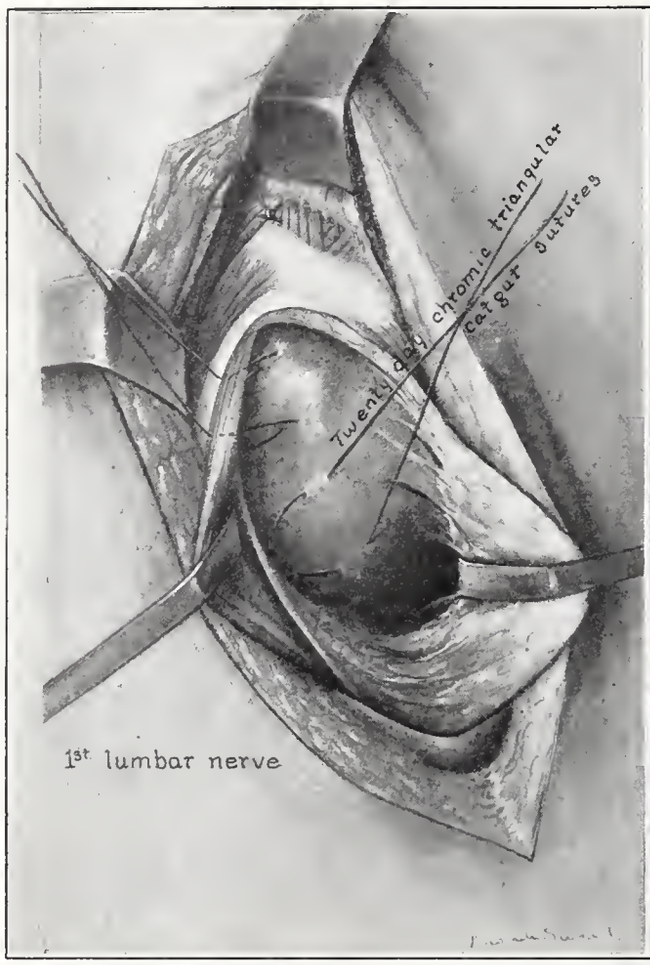

Plate III—In suspending the kidney above the twelfth rib and to the quadratus lumborum and in performing other operations, care is exercised not to injure the first lumbar nerve.

Plate IV—A. Line of incision in dorsal surface of the pelvis for the removal of stone or for plastic repair. Care is exercised not to injure retropelvic artery. B. Pelvis opened and large calculus exposed.

or by the intravenous route. The use of diuretin by mouth and novasural intravenously, although valuable adjuncts, should never replace the increased fluid intake. In order to avoid anuria it has been our practice in bilateral kidney lesions not to operate both kidneys on the same day, but to let two or three weeks intervene between the two operations. Great gentleness and care is exercised in handling the solitary kidney when it is attacked by surgery.

Cardiac Complications—The recognition of cardiac complications is very essential. In doubtful cases the heart should be thoroughly examined by a competent internist. Some cases can be made operable by placing them on digitalis prior to surgical intervention. In this way one builds up the reserve strength of the heart, enabling it to go through the operation. It is our practice to give fifteen drops of digalin hypodermically every four hours after the operation until the pulse reaches 70, at which time it is discontinued. On a number of patients this routine practice was omitted, but these did not appear to do so well. The use of digitalis not only assures the patient of reserve strength of his heart, but acts as a diuretic as well. In a written communication Dr. Harry Spiro states, "I agree that digitalis given under the above regimen is corrective and may be life saving. Oftentimes one cannot tell the exact condition of the heart and the conservative use of digitalis will strengthen the heart action. In cases of angina pectoris I do not use digitalis. Here a few extra days' rest in bed prepares the heart for the operation."

Local novocain anesthesia of the paravertebral type introduced by Lowsley of New York and localized allocain spinal anesthesia as used by Doctor Maisonnet, head urologist of the French army, at the Val de Grâce Hospital in Paris, recently introduced by the author into this country, are considered to have a decided advantage over general anesthesia in bad cardiac risks. Unfortunately local anesthesia cannot be used on nervous patients. We have found gas and oxygen anesthesia properly given without ether very satisfactory even in fairly bad cardiac cases. Patients presenting well-advanced myocarditis and aortic lesions are particularly bad risks.

Infrequency of Peritonitis—Although the peritoneum was opened on five occasions no symptoms of toxic peritonitis ensued. Operation on the kidney can be made entirely extraperitoneal if a reasonable amount of care is exercised by the surgeon. It is no longer necessary to employ the transperitoneal route even for removal of large kidneys. The anterior abdominal approach when necessary can be made entirely retroperitoneal. The recent thoraco-abdominal incision devised by Fey in Legueu's clinic gives one a particularly easy extraperitoneal approach to the high adherent left kidney with a short pedicle. In clamping the renal pedicle care should be exercised not to include the colon or duodenum, by carefully peeling away the adherent intestines from the pedicle.

Respiratory Complications — Respiratory complications are not uncommon. One should be on guard for pneumonia in those patients prone to pulmonary infection. The common cold should be entirely cleared up before attempting surgical intervention. The patient should not be subjected to drafts in the operating room and care should be exercised not to allow him to become chilled on his trip through the halls to and from the operating room. In order to lower pulmonary complications gas and oxygen anesthesia is used as a routine. Local paravertebral or localized spinal anesthesia is particularly indicated in pulmonary cases. In dissecting out large adherent tumors care must be exercised not to injure the pleura. Though this has occurred in a number of instances according to Papin, the only results are a low-grade pleurisy which usually clears up in the course of a week or two. Mayo is of the opinion that accidental opening of the pleura in which even the lung is easily seen does not result in pneumothorax or any other ill effect if the patient is lying face downward during the operation. Following all operations a pneumonia jacket is applied and the chest thoroughly rubbed with camphorated oil. Heliotherapy exposures of the kidney incision should be increased gradually, beginning with twenty minutes.

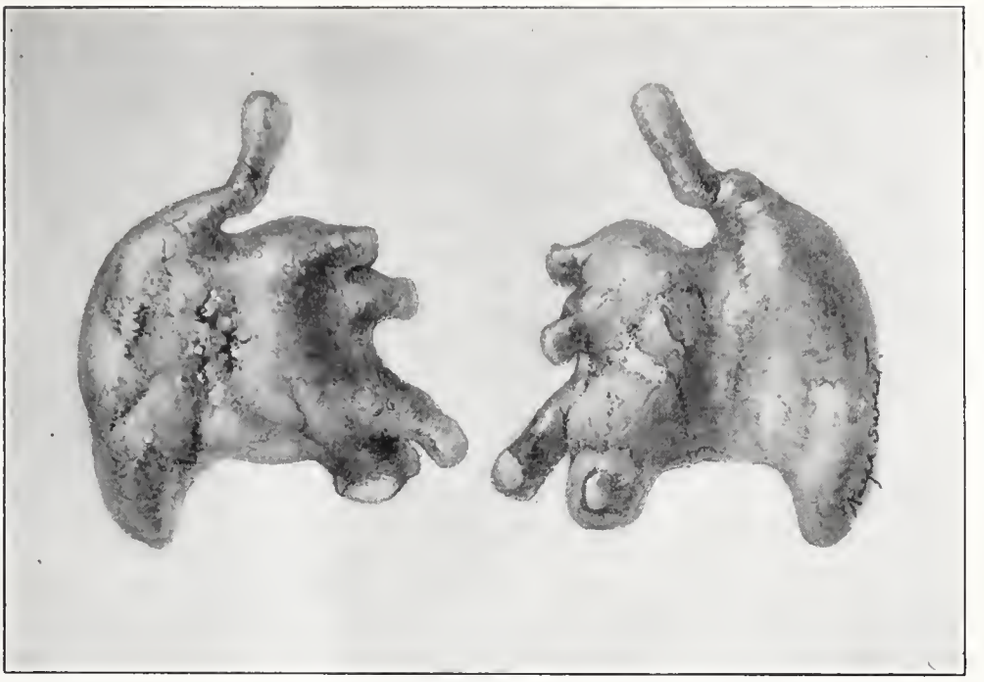

Plate V—Irregular stag-horn calculus removed through pyelotomy incision. Actual size.

PREOPERATIVE PREPARATION AND OPERATIVE TECHNIQUE

The value of preparation in kidney operations as recently emphasized by Bugbee, Cunningham and others, does much to lower the mortality. In the fifty cases operated between 1906 and 1916, during which time the steps for correct diagnosis and preliminary preparation were not so complete as those taken later, the mortality was 6 per cent. Between 1916 and 1926 the mortality was 2.04 per cent in 320 cases. Death resulted from renal insufficiency in two cases; anuria, two; pneumonia, one; septicemia, one; and failure of function in two cases of extreme nephritis in which decapsulation was resorted to as a last measure. A careful estimation of renal function and study of the working power of the opposite kidney eliminates the poor risk. Let me emphasize that careful preparation of the patient and painstaking postoperative care does as much to lower the mortality as operative skill and quick judgment at operation.

A number of pitfalls associated with technique can be avoided by exercising gentleness in renal surgery. As pointed out by Clark, the cutting, tearing, prying, delving and hard retracting surgeon not only traumatises the tissues but lowers the tissue resistance, thereby breaking down nature's defensive mechanism against infection. A wide incision and a careful dissection of the kidney from the pleura, liver, peritoneum and viscera does much to lessen this injury. Whenever the pleura or peritoneum is accidentally opened, the surrounding field should at once be carefully packed away and the opening tightly closed by suture. In freeing the kidney from the peritoneum, which is in apposition to the prerenal fascia, blunt dissection should be employed. The kidney usually can be readily freed under direct vision. In exposing the upper and lower pole, one should search carefully for aberrant, anomalous arteries and excise them when necessary. A wide crescentic incision beginning at the point of the articulation of the last rib and the vertebrae, and extending well anterior to the anterior superior spine, gives sufficient exposure of the pedicle even in cases in which this is short and the kidney is high and is entirely behind the peritoneum throughout. Incision of the costovertebral ligament permits retraction of the ribs upward allowing greater exposure. We have found it necessary to resect the last rib on two occasions in which a stone was removed from the upper pole of the remaining kidney. The rib was excised in order not to deliver the kidney into the incision. The position of the patient can appreciably increase the space between the last rib and the crest of the ileum. This can be further increased by the use of a special stabilizer which raises the lumbar region from below, firmly keeps the under leg flexed and the upper leg extended and causes counterpressure on the abdomen from below. The high, left adherent kidney is best approached by the extraperitoneal abdominothoracic incision devised by Fey at the Necker Hospital. In doing a nephrectomy the renal vessels are doubly ligated individually if possible. If they cannot be separated the pedicle is doubly clamped en masse.

A ligature is tied above and below the clamp and the clamps released during the tightening of the ligature. It is best to spend a little time and be sure of the integrity of the renal pedicle. In no case was the vena cava injured.

POSTOPERATIVE CARE

Postoperative gas, while very annoying to the patient, has never caused a fatality. It is best treated by hypodermic injection of 1 cc. of pituitrin followed in one-half hour by a quinin and dilute hydrochloric acid gas enema and by the insertion of a rectal tube. Hot turpentine stupes are employed as a valuable routine aid. Dilatation of the stomach and excessive vomiting can be controlled by gastric lavage repeated when necessary.

I have come to the conclusion that it is best to drain regularly even if there is no infection in the kidney. A number of the cases which were not drained developed abscesses that subsequently required opening. A soft rubber tissue drain is placed in approximation to the posterior surface of the pelvis or kidney and is brought out through the upper end of the skin incision. If the perirenal tissues are greatly infected a similar drain is also brought out at its lower end. If there is extravasation of urine a number of drains should be used. The drain is daily gradually withdrawn so that it is entirely removed at the end of one week. No permanent fistulae have resulted with this procedure.

ELIMINATION OF CAUSES OF STASIS

Any cause of back pressure in the lower ureter prior or at the time of the conservative kidney operation should be removed. Strictures should be dilated, stones should be removed, and any cause of extra-ureteral pressure eliminated. Neglect of the relief of back pressure from below has unquestionably often been the cause of permanent fistulae formation following the operation on the kidney above. In removing calculi from the kidney any cause of stasis should be corrected. A low ptosed kidney should be suspended. Aberrant vessels pressing on the ureter and causing back pressure should be ligated and the narrowed point in the ureter should be widened by a plastic operation. A longitudinal incision is made in the ureter at the point of angling. This is transformed into a transverse incision when it is closed by suture. In this manner the constricted portion of the ureter is widened. A number of these plastic operations have been done in cases in which the hydronephrosis was sufficient to produce marked symptoms without serious impairment of renal function. In border-line cases with reduced function surgical judgment alone can decide between a conservative plastic operation and nephrectomy. I was obliged later to remove four kidneys. Two badly infected ptosed kidneys failed to increase their function after surgical suspension, and two other kidneys from which stones were removed developed recurring trouble requiring nephrectomy.

CONCLUSIONS

1. Three hundred and seventy operated cases are reported, 293 of which were consecutively performed by the author at St. Mary's Hospital with a mortality of 2.04 per cent.

2. The choice of the anesthesia, careful preparation and painstaking postoperative care does as much to lower the operative mortality and the number of complications as operative skill and judgment at the time of operation.

3. Many pitfalls and complications can be eliminated by improvement in technique. Rough handling of the tissues, excessive retraction and loss of blood should be avoided. Incision of the costovertebral ligament gives a wider field for operation and helps the operator recognize anomalous vessels and preserve the integrity of the ureter and surrounding structures.

4. The success of conservative renal surgery depends upon the elimination of stasis, which is accomplished by maintaining or establishing the proper outflow of urine.

760 Market Street.

TABLE I

CLASSIFICATION OF OPERATIONS

Nephrectomy:	
(a) Tuberculosis	32
(b) Hydronephrosis	16
(c) Renal tumor	11
(d) Adrenal tumor	1
(e) Pyonephrosis	33
(f) (Pyohydronephrosis with stone	19
(g) Traumatic rupture	5
(h) Carbuncle of kidney	2
Partial nephrectomy	3
Nephropexy for ptosis and painful hydronephrosis of small size:	
(a) Triangular catgut method	115
(b) Fascial operation with decapsulation	40
(c) With ligation of aberrant vessel	11
(d) With uteroplasty	7
Nephrolithotomy	23
Nephrotomy	5
Decapsulation	3
Pyelotomy	22
Drainage of kidney abscess	3
Drainage of perinephritic abscess	15
Resection of solitary cyst	2
Exploratory operation and inoperable condition found	2
Total	370

TABLE II

OCCURRENCE OF OPERATIONS

Right kidney	202
Left kidney	138
Right and left kidney (fifteen patients)	30
Total	370
Operations on remaining kidney	5

TABLE III

INCIDENCE ACCORDING TO SEX

Females	210
Males	160
Total	370

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DISCUSSION

James R. Dillon, M. D. (490 Post Street, San Francisco)—We are indebted to Doctor Mathé for his very excellent presentation of his experiences in renal surgery. I do not agree entirely with his idea against incision and excision of renal abscesses and so-called carbuncle of the kidney, except when the kidney can be removed entirely without rupturing it. When pyelograms have been obtained and the site of the kidney lesion located, it has been my practice to explore that region first, and if the kidney capsule is strong enough to strip its perirenal tissues to continue the nephrectomy, but if ruptured and the nephrectomy incision becomes contaminated with acute inflammatory products, it has seemed safer to me to remove as much necrotic tissue as possible, put in drainage tubes, pack to control bleeding if necessary, and not expose any more fresh structures. After five to ten days we find the kidney has shriveled in size, the patient's resistance and immunity increased and the nephrectomy can be done without further complications.

Convalescence can be shortened in tuberculous nephrectomies by doing a ureterectomy in those patients having thickened indurated ureters. The nephrectomy is done through the usual lumbar incision, the patient is then put in the dorsal position and the ureter removed down to the bladder through a rectus incision. I have not felt the risk was materially increased and have not had any case take more than four weeks to heal completely.

❦

Frank Hinman, M. D. (384 Post Street, San Francisco)—Doctor Mathé has given a very instructive and interesting summary of his experiences in renal surgery. The showing of 2 per cent mortality is an excellent one. In analyzing the classification of conditions treated, one is somewhat surprised at the number of nephropexies performed—183. I do not feel so confident as to the safety of leaving clamps in place in nephrectomy as he has done six times in 119 nephrectomies with good results in each case. Reviewing the experiences of others in the literature, there has been a rather high proportion of fatal postoperative hemorrhages following release of the clamps, and I personally feel that clamps should never be left on except in the most extreme emergency condition. We have not left clamps on for ten years. His emphasis on the importance of fluids in all kidney surgery before operation bears out the experiences of others in this field. Water is an excellent diuretic and does not entail extra work, so far as renal tissue is concerned. We make it a routine to give hypodermoclysis during the operation so as to supply plenty of fluids without inconveniencing the patient after he awakens from the anesthetic.

One of the most serious complications to all kidney work that does not seem to be sufficiently emphasized is that of infection. It is probable that a large proportion of the failures in both conservative and radical surgery on the kidney are due to secondary infections. These infections, as has been well emphasized, are produced or made serious by rough and prolonged surgery. Dispatch at the time of operation is one of the greatest assets of successful renal surgery and, of course, by dispatch one does not mean undue haste, but that everything move smoothly and with a certain amount of speed. An unfortunate example in our own experience very well illustrates this point. It was in the case of pelvic stone that acted in a ball-valve manner at the ureteropelvic juncture in a solitary kidney of a man of 65. At the time of operation there was no particular difficulty other than after opening the pelvis the stone had slipped up into one of the minor calyces and was not found until some time had been lost in searching. The operation took about one hour and a half and should have been completed in less than one hour. The stone was finally found and removed. The kidney functioned, but the patient developed a very severe infection of the kidney and wound which proved to be a gas bacillus infection of which he died four days after operation. Autopsy was performed and it was found that the gas bacillus had invaded the perirenal tissues and the muscles of the back in the neighborhood in a very extensive manner. Serum treatment and radical resection of the involved areas before death had given no benefit. The case exemplifies the severe type of infection that may follow kidney operations: an infection which undoubtedly came from the intestinal tract, an infection which was secondary to trauma to tissues and which most probably would not have occurred had the stone been immediately found and removed, the operation shortened and the retraction and trauma reduced. This experience has taught us the advisability of always having available in stone cases an x-ray operator who can take pictures after the method of Quimby or can fluoroscope the kidney at the time of operation as is the custom at the Mayo Clinic. It affords considerable gratification also to have the word of such an x-ray expert that there are no shadows left after stones that have been shown by x-ray have presumably been removed.

❦

Guy Manson, M. D. (1020 Mattei Building, Fresno)—I wish to express my appreciation of the privilege of discussing Doctor Mathé's valuable paper. There are many lessons to be learned in reviewing the surgical cases of a man of Doctor Mathé's experience. I am inclined to agree with Doctor Hinman, that the leaving of clamps on the kidney pedicle is a much more serious procedure than one would infer from Doctor Mathé's paper. I have never had the courage to do so, although I can easily see that emergencies may arise that would make it absolutely necessary. When clamps are left on they should be removed with the greatest care, loosening the clamp a notch or two each day, for one or two days before complete removal. Too rapid or rough removal of a clamp may open up a vessel and start fresh bleeding.

In tuberculous kidneys I believe the perirenal fat is involved more often than we suspect. I believe it is important to remove as much of this tissue as possible. I have not been in the habit of removing the ureter, but I have lately adopted the procedure of bringing the ureter out and suturing it to the skin at the lower angle of the wound, much as we treat the vas in our tuberculous epidimitis. I have not had a large enough series of cases to pass any judgment on the value of this procedure. Since doing this I have not had a wound break down, and I have never seen any bad results from it.

Doctor Mathé mentions septicemia as a complication in renal surgery, but does not dwell much upon it in his discussion. Particularly in kidney stones, complicated with infection, should the danger of septicemia be emphasized. The greatest care should be taken to clear up the kidney infection and we should not be in too great a hurry to remove the stone. I recently lost a patient from septicemia, although we treated the infection in the kidney for two weeks after the fever had subsided and the urine was free from pus, before we removed the stone.

❦

Doctor Mathé (closing)—The constructive criticism of this paper brought forward in the discussion of Doctors Dillon, Hinman, and Manson, aids in the accomplishment of its purpose, which is improvement in technique, prevention of complications, and lowering of mortality.

Doctor Dillon suggests the advisability of performing a two-stage nephrectomy in those cases of renal abscess and carbuncle in which the tunica fibrosa is ruptured in the process of delivering the kidney and the perirenal tissues thereby infected. This is a wise procedure and should also be applied to cases complicated by perinephritic abscess. However, if there is no pre-existing infection of the perirenal tissues and, if at the time of operation they are carefully protected by gauze packing, it seems logical that the kidney may be removed without danger of infection. As Doctor Hinman emphasizes, infection is an important factor. Limitation of space did not permit me to dwell sufficiently upon it in this article.

There is no question but that rough handling of the kidney, severe retraction and undue loss of blood lowers the local resistance of the kidney, so favoring infection. In doing conservative operations on kidneys presenting pelvic infection, urinary antiseptics are given, pelvic lavage instituted and fluids forced in order to clear up or at least to minimize the amount of infection in the kidney at the time of operation. As emphasized by Doctor Manson this is an important factor in preventing septicemia which is more likely to occur, because of the greater vascularity, when the parenchyma rather than the pelvis is opened. Operations on the kidney can be performed quickly, but safety should have precedence over speed. Good exposure gained by a wide incision, division of the costovertebral ligament, and the proper posture of the patient, coupled with reasonable speed and good teamwork on the part of the assistants, will permit the average kidney operation to be performed in about an hour's time. The use of the fluoroscope at the time of operation will facilitate the search for stones by assuring the surgeon that they are all removed, and thus shorten the time of operation and eliminate the possibility of leaving fragments behind to act as nuclei for future stone formation.

The diversified opinion as to the treatment of the ureter in performing nephrectomy for tuberculosis is exemplified in the discussion of Doctors Manson and Dillon. Doctor Manson never had a tuberculous wound break down after removing the perirenal fat and bringing out and suturing the ureter to the lower end of the skin incision, whereas Doctor Dillon obtains complete closure in four weeks by removing the ureter also. Although I always attempt to remove the perirenal fat, and I have treated the ureter by both of the above methods, nevertheless 13 per cent broke down. Based upon a review of the literature this seems to agree with the experience of most surgeons. At the recent meeting of the western branch of the American Urological Association held in Seattle on July 6, 1927, B. Scholefield reviewed the causation of persistent sinuses and delayed healing of tuberculous nephrectomy wounds in eighty consecutive cases at the Peter Bent Brigham Hospital. His complete review of the literature and detailed study of these cases prove that a certain percentage of wounds break down, no matter what disposition is made of the ureter; sinuses are often due to a tuberculous infection of the granulation tissue that forms in the process of healing. In some cases these are cured by exposure to the sun rays; in others closure of the wound can only be accomplished by clean complete removal of the infected granulation tissue.

There is no question that there is considerable danger of hemorrhage in releasing clamps that have been left on the renal pedicle in performing nephrectomy. Certain extreme emergency conditions consisting of pre-existing shock due to the loss of blood from kidney rupture and that type of shock that sometimes suddenly occurs while removing extremely enlarged kidneys warrants its occasional use. In the six cases in which we left them in place, we felt that the danger of subsequent hemorrhage was far outweighed by the danger of death from shock. It is well to wait eighty-two or ninety-six hours and not twenty-four hours before removing the clamp. The clamp is carefully loosened notch by notch and left in apposition to the pedicle for an hour. If no hemorrhage occurs, sterile olive oil is poured into the wound in order to assure lubrication and the clamp carefully removed.

I wish to thank Doctors Dillon, Hinman, and Manson for describing some of their experiences with the complications of renal surgery. These statistics, added to the aggregate of those of other urologists throughout the country, should help lower the mortality, reduce the complications, and improve the technique of renal surgery.

SENSITIZATION PHENOMENA IN DERMATOLOGY

By H. J. Templeton, M. D.
Oakland

Discussion *by Charle E. Schoff, M. D., Sacramento; C. G. Stigall, M. D., San Diego; Douglass W. Montgomery, M. D., San Francisco; Albert H. Rowe, M. D., Oakland.*

IN discussing sensitization phenomena in dermatology I would rather do so under the broad term "hypersusceptibility" than to confine my remarks to the narrower term "anaphylaxis." For in sensitization we see two types of reactions. First, true anaphylaxis due to sensitization to some definite protein; and second, a hypersensitization to agents of varying chemical composition and which cannot, strictly speaking, be classed as true instances of *protein* sensitization. Under the heading of anaphylaxis would come the urticarias, etc., due to sensitization to some definite food, such as crab, while under the second heading mentioned above would come such cases as extreme sensitization to paraphenylendiamin used in dyeing fur neck pieces.

We may also divide the agents to which the skin may become sensitive into those with which it comes into contact from without and those acting upon it from within the body. This is the most practical way to approach the subject.

EXTERNAL AGENTS

Most of the dermatoses produced by contact with external agents are of the dermatitis venenata type and can roughly be quickly differen-

tiated from those produced by internal agents which more frequently paint a picture of urticaria, erythema multiforme, toxic erythema, etc.

Several complete books have been written on the subject of sensitization of the skin to external agents. Instances have been reported of sensitization to a vast number of the objects with which man comes in contact. Hence, I will mention only the more common ones: paraphenylendiamin in hair dyes, quinin hair tonics, mascaro for blacking eyelashes, orris root in dry shampoos, in face powders or tooth pastes, rouges, leather hat bands. Any of these may produce a dermatitis of the face in sensitive subjects. The treatment is simple—remove the offending agent. If what is responsible cannot be determined have the patient stop using anything that has been applied to the affected area for a while and resume the use cautiously, one by one, after the dermatitis has disappeared. Dermatitis of the neck may be produced by fur neck pieces (and this is apt to occur the first time the patient perspires when wearing a new piece) beads, silk (rarely) or dyed scarfs. A dermatitis of the body can come from sensitization to wool underwear.

It is extremely difficult to determine just what external agent produces a dermatitis of the hands. Intelligent patients can help greatly in the search by jotting down notes in regard to all the objects with which their hands come in contact in their occupation, their home life, and their hobbies. Under the occupational dermatoses can be mentioned the primrose, chrysanthemum, tulip dermatitis of florists, the turpentine dermatitis of painters, cement workers dermatitis, that from novocain in dentists, from formalin and bichlorid in physicians, from hair tonics in barbers, from flour in bakers, and sugar in grocers and others too numerous to mention. The tracing of the offender in these cases requires a Sherlock Holmes.

A careful study of the patient's occupation and habits is of far more value than the cutaneous tests, although these should be resorted to in obscure cases. Flea bites are well known in the San Francisco Bay district, but it is not so generally known that the poison which the flea injects may, in sensitive patients, produce a widespread urticaria in areas removed from the original bites. Poison oak, seen so frequently in this district, needs only to be mentioned, as does the method of treating it by desensitization with hypodermic or oral administration of extracts of its leaves. A reaction, distinctly allergic in character, which I have observed in a few of my cases treated by this method and which I have not seen mentioned in print, is the occurrence of widespread urticarias following the injection of poison oak extract in patients suffering from poison oak. These I interpreted as true allergic reactions, as the urticarias came on immediately following the injection of an allergin, poison oak, to which the patients were known to be sensitive.

ENDOGENOUS AGENTS

Cutaneous reactions produced by endogenous agents are much more apt to be instances of true allergy than those mentioned above. Moreover, they are especially prone to occur in patients with other evidences of allergy such as hay fever or asthma in themselves or their ancestors. One author found that out of a series of 103 cases of cutaneous allergy 100 had signs of allergy elsewhere (hay fever, or asthma).

In eczema, urticarias and other dermatoses resulting from allergins from within the body, the determination of the offending allergin is quite difficult. In classifying such cases as allergic I lay a great deal of stress upon a history of hay fever or asthma in the patient or his family. A carefully taken history will sometimes disclose the ingestion of some particular food just prior to the onset of the urticaria or eczema. It is well to have the patient keep a diary and write in it all of the happenings and all of the foods ingested prior to each outbreak of his eruption. After several attacks he may be able to pick out the responsible agent. In the great many cases in which these methods fail, but which we feel sure are allergic, we must resort to cutaneous protein sensitization tests. I personally use the scratch method of application routinely and reserve the intradermic tests for special cases. The reactions must be studied very carefully, for the enormous wheals so commonly seen when testing for hay fever are extremely rare in dermatologic testing. Positive reactions are comparatively small, sometimes but little larger than the control and rarely measure over 10 mm. in width.

False positive reactions frequently occur. I have obtained strongly positive reactions to foods which the patient was eating with impunity. I have also obtained negative reactions to proteins the ingestion of which would precipitate an attack of urticaria. Urticarial skins react so easily to all irritants, even to the scratches, that the tests may all seem positive and valueless. Following an attack of urticaria the skin may be in a state of anti-anaphylaxis for a few weeks and so give false negative results. All of these difficulties can be minimized by repeating the same tests on several different occasions.

The best known example of cutaneous anaphylaxis is the serum sickness, generally urticarial in nature, which comes on about eight to twelve days following the injection of the various sera. If a patient is known to have received a dose of a serum some time previously or is suspected of being sensitive to it, we should desensitize him by giving a number of small, gradually-increasing-in-size, doses of the serum before giving a second large dose. Or, better still, use serum derived from some animal other than that which furnished the original serum. For example, ox serum for the second dose if horse serum was used first.

Urticaria and erythema multiforme are so closely related that they can be considered together. Both can generally be regarded as reactions of sensitized skins to some specific allergin. While the offending agent in most cases of urti-

caria is some food such as crab, shrimp, lobster, strawberries, etc., it may be bacteria or their toxins from some distant focus of infection. This is particularly true in erythema multiforme which in most instances is the response of an allergic skin to bacteria from some focus of infection to which the skin has become sensitive.

It is difficult to say just how high a percentage of eczemas are due to sensitization to foods. Certainly the percentage of proved cases is rather low and yet we should always consider this possibility and run protein sensitization tests on all of our obscure cases. In infantile eczema we frequently find that the trouble began at the time when the child was first put on a mixed diet. If we can correlate the onset of the eczema with the date on which some particular food, egg for example, was started, we can remove the offending food from the diet and secure brilliant results. Protein sensitization tests can be used in determining the cause of infantile eczemas, but in these little patients a simpler plan can be adopted. This consists of putting the child back on the diet, generally milk, upon which it was doing well before the eczema developed, keeping it there until the eczema has improved and then adding one food at a time, say one food per week, and carefully noting the child's reaction to each food. Infants on the breast may be sensitive to proteins ingested by the mother. Just as in adults, infantile eczema is not always a sensitization phenomenon and other causes must be sought and remedied.

CUTANEOUS PROTEIN SENSITIZATION TESTS

Dermatologists sometimes use a special method of applying the tuberculin test, an allergic reaction. When a given cutaneous lesion is suspected of being tuberculous, a tuberculin ointment is rubbed into it. If the lesion *is* tuberculous a focal allergic reaction takes place and the lesion flares up violently. The luetin test, an allergic test for syphilis, has been abandoned by syphilologists as unreliable and worthless.

I am a firm believer in the importance of hypersensitiveness in the production of many of the dermatoses. No one who has done any amount of work in dermatology and allergy can doubt the truth of the basic principle involved. Such excellent results were early obtained in the diagnosis and treatment of hay fever and asthma that dermatologists originally thought that similarly brilliant results could be obtained in the allergic dermatoses. Some truly excellent results were obtained, but many failures were also noted. Gradually the dermatologist has come to look upon these tests, not as a quick, easy, infallible method of arriving at a diagnosis, but rather as a valuable aid to be used in certain difficult, obscure cases. In a small percentage of cases they enable us to make an absolute diagnosis of the cause of the eruption and then our results are brilliant. This percentage of valuable results, small though it may be, certainly justifies the use of these tests in dermatologic practice.

TREATMENT

If the substance to which the patient is sensitized can be discovered by means of the history or by cutaneous tests and removed, recovery is generally prompt. If its removal is not practical, as in sensitization to very common articles of food such as wheat or eggs, desensitization may be practiced. This is a valuable aid, but the desensitization is not permanent and must be repeated at intervals.

In allergic dermatoses, the cause of which cannot be ascertained, we may practice non-specific desensitization. This can be done by feeding peptone before meals, by injections of peptone, by injections of the patient's own blood serum, and by raising the patient's serum calcium by administration of calcium lactate and parathyroid followed by general body radiations with quartz light.

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DISCUSSION

CHARLES E. SCHOFF, M. D. (Farmers and Mechanics Bank Building, Sacramento)—Doctor Templeton has summed up the subject very nicely and his sounding the keynote of conservatism relative to the efficiency of cutaneous allergic test reactions is well taken. The inexperienced are apt to accept laboratory diagnosis as final rather than accept it as an adjuvant to a definite conclusion after a thorough historical and clinical examination has been made.

C. G. STIGALL, M. D. (3950 Alameda Place, San Diego)—Doctor Templeton has covered this subject so thoroughly and concisely I feel there is little room for comment. His remarks concerning the administration of calcium lactate and parathyroid in urticaria impressed me rather forcibly.

In the past year I have noticed a decided increase in urinary acidity in practically all cases of this type. The acidity sometimes will vary considerably in the course of twenty-four or forty-eight hours, requiring several tests to determine a definite average.

Some of the most obstinate and puzzling cases have shown very gratifying improvement and recovery by the liberal use of other alkalis with the calcium lactate and parathyroid in order to keep this urinary acidity at a low level. Also by a strict diet of alkaline-producing foods until the symptoms have cleared sufficiently to allow other foods consistent with the individual case.

My experience has been that good results in skin reactions depend upon meticulous application of the individual tests, especially in asthma and hay fever, and by keeping in mind the probability that tomorrow may show a different picture under apparently the same conditions.

Oftentimes when a diagnosis seems remote some chance remark made by the patient will help clear matters considerably.

DOUGLASS W. MONTGOMERY, M. D. (323 Geary Street, San Francisco)—The skin may be regarded as a gland with its free surface directed outward, and having imbedded in it a great number of subsidiary glands for secreting sweat and sebum. There are also in it pitlike and slitlike invaginations out of which spring hairs and nails. The secretion from the surface of this gland consists of epithelial cells, and is called scurf or dandruff, which is commonly supposed to consist only of dead cells. We, however, do know that similar cells thrown off in a similar way do convey important secretions such as milk and sebum. It is indeed probable that these skin cells constitute an important emunctory for waste or poisonous matters.

As the surface of this skin gland is exposed to view and touch, symptoms, which entirely escape notice in the internal glands and viscera, are here readily seen

and felt. In other words it may be critically examined as no other gland can be.

Another feature of the skin is the multiplicity of its constituents. It is most plentifully supplied with sensory nerves, in which any functional or structural change may cause either complete insensibility, or increased sensibility as evidenced by itching, burning or pain. We have then the largest gland of the body with its secreting surface covered only by a thin translucent layer of horn, and the body of the gland itself richly supplied with blood vessels, and with nerves, motor, sensory and vasomotor, and many of the sensory nerves endowed with special receptivities, as locality, touch and pain, and with one very especial receptivity giving rise to itching. Now reflect that the deep or internal aspect of this extensive gland is exposed to influences conveyed to it by the blood current and by its nerves, motor, sensory, and vasomotor, and that its external surface comes in contact with the outer world with its irradiations, atmosphere and other innumerable material contacts, and that to each of these influences it responds in a different way, and that to some of them it responds in a number of different ways. For instance, the stimulus of the lepra bacillus alone gives rise to a long list of symptoms.

Under the broad term "susceptibility" we include all the various ways the skin and its different tissues and organs may react to each of the innumerable causes and influences to which it is exposed. Innumerable contacts pass unnoticed, or are beneficial or are pleasurable, but when the skin or any part of it is so tuned to any ordinary stimulus as to give rise to unusual or disagreeable symptoms instead of the normally unnoticed, or beneficial or pleasurable ones, it is said to be sensitized to that stimulus.

Of late years a great deal has been learned about these sensitizations, and many papers such as the present excellent one by Doctor Templeton have been written on the subject, and although the field is a vast one, it is so important, especially to dermatologists, that any good consideration of it is welcome.

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Albert H. Rowe (242 Moss Avenue, Oakland)—That allergy or hypersensitiveness of the skin is the cause of many eczemas and most urticaria as well as angioneurodema has been well emphasized by Doctor Templeton. This fact is accepted by too few physicians largely because of the difficulty in ascertaining the allergic agents active in each case. The cause of contact dermatitis such as that of the face, neck, or arms, from pollens or animal emanations such as those from wool, feathers, silk, or mohair; of the hands from wheat flour; and of the face and neck from orris root in powders or cosmetics, can usually be ascertained by the history and through skin testing. Urticaria and eczema resulting from ingestion of foods, however, are often difficult to diagnose. Certain cases give skin reactions to foods, especially to wheat, milk or eggs, and so solve the problem. However, skin reactions are negative in about 50 per cent of the patients who have food allergy. Many physicians unfortunately have discounted allergy in the etiology of these conditions because of such negative skin tests. Due to this failure of the skin to reveal all sensitizations especially to foods, treatment must frequently be based on history and on the experience of the physician in prescribing the diet for such skin conditions. It is possible through allergic diagnosis to obtain relief for many cases of eczema, urticaria and angioneurodema that have resisted the usual methods of dermatological therapy. The other types of sensitization which Doctor Templeton has described due to dyes, drugs, lacquers and similar substances, are probably the result of a tissue disturbance identical with or closely related to allergy which is as yet poorly understood. Recognition of such causes, however, is most important for the relief of the skin lesions.

ELECTRODIATHERMY—ITS USE IN THE TREATMENT OF BENIGN AND MALIGNANT LESIONS OF THE UTERINE CERVIX

By Frank M. Mikels, M. D.
Long Beach

Discussion *by A. V. Pettit, M. D., San Francisco; R. H. Shippey, M. D., Long Beach; Frank W. Lynch, M. D., San Francisco.*

In the medical and surgical treatment of pathological conditions of the regenerative organs conservatism is becoming the keynote of present-day practice. A new therapeutic measure is invariably met with skepticism and distrust. Archaic medical methods and radical surgical procedures seem to dominate the enthusiasm and judgment of many very eminent and successful practitioners.

The uterine cervix is the portal for the perpetuation and preservation of the species. The integrity and normal function of the uterine cervix is essential to the future welfare of the human race. The time has come when the treatment of this organ should be based upon principles of conservation, aiming at a maintenance of its normalcy in structure and function. This can be adequately accomplished in good part by the use of electrodiathermy in the treatment of many benign and malignant lesions of this portion of the uterus.

Electrodiathermy means the application of a special modality of electricity which induces heat into the tissues of the body. The body is a poor conductor to electricity and because of its resistance to the current an elevation of body temperature results. The modality giving the best results in treatment of the uterine cervix is the D'Arsonval current, a form of high frequency. The D'Arsonval current may be obtained most conveniently from the modern transformer type of high frequency apparatus and from either the stationary or portable model. The latest types have three outlets, for high, medium, and low voltage, and are so constructed that the milliamperage may be regulated for the particular treatment requirements of each lesion.

TECHNIQUE

Various kinds of electrodes are obtainable. The most convenient one has been designed by Dr. T. Howard Plank. It is composed of a wire covered with thick rubber insulation having a connector at one end to fit into the socket of the machine and a vulcanite handle at the other end into which may be inserted pieces of aluminum wire of various sizes, 2 millimeters in diameter and 5 to 20 centimeters long. This aluminum wire is also partially covered with soft rubber tubing, leaving about 1 to 2 centimeters of the end exposed. The end of this wire may be blunt or sharpened as the technique requires.

Other more elaborate sets of electrodes have been invented and made available. These sets are composed of various sized and shaped gold-plated discs and sharp, pointed gold-plated rods which may be screwed to a vulcanite handle attached

to a heavy insulated cord connected with the apparatus.

The single outlet terminal connection is best adapted to obtain the desiccation effect in the tissues. It does this by delivering the current through a short space or between the point of the electrode and the surface of the lesion, or by touching the surface lightly with the point of the electrode. The electrode is connected with a single cord to the high voltage outlet terminal.

The double outlet terminal method is best adapted to obtain the coagulation effect. The electrode which is brought in contact with the lesion is connected with the medium or low voltage terminals of the D'Arsonval current, and the block tin plate or autocondensation pad which is placed in contact with the patient is connected with the common outlet terminal. A piece of block tin four to six inches square attached to a thickly insulated wire is the most convenient size for ordinary service. It must be evenly applied to the skin to avoid burning. Soap lather may be applied to the skin where the block tin is brought in contact in order to eliminate irritation caused by the fine sparking of the current and also to prevent a superficial burn. When the block tin is placed in even contact the perspiration will usually supply sufficient moisture to keep the skin from getting irritated or burning.

Another convenient and practical method of making the connection is to have an assistant interposed in the circuit between the apparatus and the patient. The assistant places the palm of one hand in direct contact with the skin of the patient and holds the aluminum handle connected with the common outlet terminal in the palm of the other hand. The operator then treats the lesion with the electrode which is connected to the medium or low voltage terminal. This method has a special advantage over others because of its psychological effect upon the patient when a general anesthetic is not used. It is very easy to reassure the patient who may be apprehensive of electrical shocks that there will be no intolerable discomfort or danger because all the electricity must pass through the assistant first. This reassurance invariably puts the patient at ease.

The Oudin current may be utilized for desiccation; the D'Arsonval current for coagulation and carbonization. Reactionary hyperemia with or without desiccation, coagulation or carbonization may be obtained by utilizing the D'Arsonval current hooked up with larger plates and electrodes. The degree of temperature can be maintained and controlled when using a properly balanced machine. The approximate degree of temperature may be recorded by use of thermometers specially made for this purpose.

In order to desiccate it is necessary to induce sufficient heat in the tissue to dehydrate the cells. It has been estimated that a temperature 125 degrees F. may be induced in the skin before it becomes desiccated by the dehydration of its cells. A higher temperature is required when the tissue is vascular and an extensive section is being desiccated, coagulated or carbonized.

In order to electrocoagulate vascular tissue it is necessary to induce heat above 148 degrees F. and even to the boiling point of 220 degrees F. by raising the milliamperage, ranging from 200 to 500, according to the efficiency of the apparatus. The moisture evaporates from the tissue and the cells disintegrate, congeal or coagulate. A dense whitish or grayish plaque which is commonly called the coagulum appears. This coagulum adheres to the subjacent normal tissue when the entire lesion has been destroyed by the heat. The lateral extent of the coagulation from the electrode may be taken as a guide of the depth of the coagulum from the point. A study of the coagulation effects has revealed the fact that the direct extent from the point of the electrode is apparently the same as the extent laterally. This coagulum should not be removed mechanically, but should be permitted to slough off in the due course of cellular reconstruction of the subjacent surface. If the coagulum is removed mechanically there is a tendency for the denuded surface to bleed; also the granulation tissue will become redundant and interfere with the epithelization which is essential to the re-establishment of the continuity of the superficial mucous membrane.

To promote epithelial regeneration it is often necessary to desiccate the redundant granulations or to apply mild antiseptic astringents or coagulants such as a 5 to 10 per cent aqueous solution of nitrate of silver or a 10 per cent aqueous solution of copper sulphate until the surface is level or even slightly concave.

Carbonization of the tissue is indicated when the lesion is very large and protrusive and especially when a major portion is to be removed immediately by curetting or teasing. This may be done by elevating and prolonging the degree of heat until the coagulum is charred, turns black and becomes friable. The outer carbonized portion may be easily curetted, leaving a considerable thickness of the underlying coagulated portion adherent to form a substantial coating over the subjacent normal tissue. This remaining coagulum should be left to desquamate.

It is sometimes desirable in treating lesions of the uterine cervix to induce sufficient heat to obtain a bactericidal and a hyperemic effect. It is estimated that a temperature of 106 degrees F. or more is lethal to the gonococci. This thermostatic effect can be obtained with the double outlet terminal method and is very efficacious in combating deep-seated and obstinate infections, such as those which are centralized in the acini of the mucous glands. The hyperemic effect is of value because it promotes the elimination of bacterial detritus.

TREATMENT OF ENDOCERVICITIS

In all cases of endocervicitis, and especially where the mucous glands are infected, a thick tenacious mucopurulent discharge is present. This discharge is so tenacious that it cannot be disintegrated or washed out by detergent douching and collects in a thick coherent gob in the posterior fornix. It is often very difficult to remove the mucopurulent plug until some chemical has

been applied to destroy its cohesiveness. Silver nitrate fused on the end of a wooden applicator applied into the mucous plug will congeal it so that it can be teased off with a sponge forceps. In order to prevent this disgusting discharge from persisting, the remains of the mucopurulent plug in the cervical canal my be subjected to the action of the D'Arsonval current by inserting the sharp point of the aluminum wire 3 to 6 millimeters, and then turning on the current until the milliampermeter registers about 200 and holding it there for two or three minutes. If distress is caused, interrupt the current. One or more treatments may be required. When more than one treatment is required it may be repeated every day. Remarkable improvement is noted after the first treatment. Final cure can only be determined through the usual microscopic examination of several smears of the mucous discharge from the cervical glands over a considerable period of time. One to six treatments have been required to destroy the infection in the series of patients treated by this method.

Corbus has devised a special thermic electrode containing a thermometer which registers indirectly the degree of heat induced in the tissues. The length of each treatment and the number of treatments required by this method to clear up an infection in the mucosa and glands of the cervical canal is long and protracted, nevertheless it is efficacious. This tedious procedure may be superseded by the method just described which is simple, more convenient and of shorter duration.

TREATMENT OF NEOPLASMS

Small tumefaction on the vaginal surface of the uterine cervix are treated by the coagulation method. After the coagulum sloughs off a small crater is left which fills with granulations. These granulations should be prevented from becoming redundant so that the surface may reform smoothly. Often the reconstruction of the surface is so complete that a line of demarcation between the location of the original lesion and adjacent normal tissue cannot be found.

Nabothian cysts which occur in various numbers in the zone about the external os may be very readily removed by puncturing them with the point of the aluminum needle and turning on sufficient current to cause a thorough desiccation of the contents of the cysts and slight coagulation of the capsules. After the coagulum sloughs the small crater fills in very nicely with granulation tissue and soon is resurfaced with normal smooth mucous membrane.

Pedunculated papillomata and mucous polypi presenting in and about the external os are easily removed by coagulating the stem or pedicle and then excising through the coagulated portion and obtaining a complete removal of the tumor and its pedicle. This may be done without causing any hemorrhage. The coagulated stump passes through the usual order of desquamation.

TREATMENT OF EROSIONS

The various types of erosions also respond to this treatment. The technique of treating them is practically the same, but there are variations involving the degree of heat to be inducted into the lesions, the depth and thickness of the coagulum to be formed and the degree of desiccation, coagulation and carbonization to be obtained.

The simple erosions require desiccation or only thin coagulation to obtain cessation of the chronic inflammation and bring about complete restoration of the eroded area to a normal appearance.

The erosions complicated by rhagades or fissures require sufficient depth of coagulation to remove all the serrations. The coagulum should be extended into the cervical canal, up to the edge of the intact and healthy mucosa.

The simple and fissured erosions, complicated with several small nabothian cysts, should be sufficiently coagulated to include all the cystic regions.

In treating the more redundant and extensive follicular and papillary erosions the coagulum must be sufficiently extensive to efface all the papillary formations and the follicles which are formed by the overlapping and invagination of the papillae. These erosions often are dense, firm and indurated; some are soft and spongy.

It is difficult to differentiate between benign inflammatory and possible malignant lesions from their gross appearance. When there is uncertainty a section should be removed by excision for a microscopic examination and the remaining portion of the lesion immediately electrocoagulated. If it is malignant, radium and deep x-ray treatments are indicated.

The technique of removing benign and malignant lesions is identical. Absolute and thorough destruction of all tissue appearing to be abnormal is the only adequate safeguard against subsequent complications. The sharp point of the electrode or wire should be plunged into the lesion deep enough to cause complete coagulation of the lesion even to the muscular structures. If the resultant coagulum is very thick its superficial portion may be carbonized and curetted leaving less of the devitalized tissue to desquamate.

After the coagulum desquamates and the denuded surface heals, no further treatment is required. During the desquamation period it is necessary to use a deodorizing and antiseptic douche two or three times daily. A douche of two quarts of sterile water with five to ten drops of creolin added is usually effective. If there appears in the deeper portion of the cervical canal redundant granulomatous tissue, which tends to stain the cotton swab with blood, a 10 per cent aqueous solution of silver nitrate or copper sulphate may be applied daily. If these methods fail to clear the surface of the canal there is indication for additional desiccation or even coagulation. This should be extensive enough to further destroy all tissue which interferes with a smooth surface reformation.

For a time the caliber of the cervical canal may be considerably enlarged after the coagulum has separated and the surface has been reformed with a new coat of mucous membrane and scar tissue.

Since there is a tendency for leukoplakia to become malignant it is expedient to remove these patches by electrocoagulation and follow with appropriate application of radium.

All the benign lesions including the various types of erosions and even the extensive erosions may be treated in the office by this method without a general or local anesthetic.

If there is a suspicion that any of these lesions are malignant the patient should be sent to the hospital, a tissue section made, and appropriate treatment then instituted. The patient may be placed under a general anesthetic, usually gas augmented with ether. If malignancy is present an adequate application of radium should be made immediately after the lesion has been thoroughly electrocoagulated. This treatment should be followed by a full course of deep x-ray treatments, and repetition of radium applications as indicated.

It is always advisable to do a thorough diagnostic curettage in all cases where malignancy is suspected. The curet should not be used in the uterine canal until the lesion located in and about the cervical canal first has been sectioned for microscopic check-up and thoroughly electrocoagulated. All remaining abnormal cells in the cervical region should be destroyed before the curet is passed over it into the fundal portion of the canal. This order of technique minimizes the danger of transplanting malignant cells from the cervical portion of the canal to the fundal if such transplantation is possible.

CONTRAINDICATIONS

The contraindication for electrodiathermic destruction of abnormal lesions in the cervical region are the same as they would be in any other part of the body. If there is any reason to suspect a luetic condition a Wassermann test should be made. If this is positive the patient should be put on an intensive antiluetic treatment until a negative reaction to the Wassermann test is obtained. There is a tendency for the lesion to be sluggish in its reformation to normal when active lues is present.

Examination of smears taken from the cervical canal and the vaginal discharge should always be made. If the Vincent's spirilla or fusiform bacilli are present this infection should be cleared up with local applications of a 10 per cent copper sulphate solution or neoarsphenamin in glucose solution, augmented with intravenous injections of neoarsphenamin.

TREATMENT DURING PREGNANCY

Some writers intimate that it would be precarious to use electrodiathermy on the cervix of a pregnant uterus. This does not hold true when the electrodiathermy treatment is administered with due care and precaution. Complete destruction of the abnormal lesion in the cervix can be obtained without interfering in any way with the process of gestation. Two precautions are taken in treating a gravid uterus. Do not insert or make contact in the canal with the electrode more than 0.5 cm. beyond the rim of the external os of the cervix, and always apply the indifferent block tin plate to the outer region of the thigh, and when an assistant is interposed in the circuit have her apply the hand to the thigh of the patient. Do not make application of the indifferent or surface electrode over the lower part of the abdomen or pubic region. Obtain an indirect course of current from the point of contact of electrode to the cervix and the outer surface of the body so that the circuit will not pass through the fundus of the uterus. Erosions have been successfully removed and the mucosa of the cervix restored to normal when the fundus has been in various stages of gravidity without interfering in any way with the process of gestation.

A focal infection in or about the uterine cervix is undoubtedly responsible for a great many serious secondary complications, such as endometritis, metritis, parametritis, salpingitis, pyosalpynx, oophoritis, and plebitis in the broad ligament and the lower extremities. Pelvic abscess and peritonitis may all have their inception from an original focus in the cervical mucosa. In addition serious systemic disturbances may be traced to the absorption of the bacterial detritus and toxins from an original focus in the cervix; nor is it beyond the range of probability that remote secondary infections may come from this same source by invasion through the blood stream or lymphatics.

CONCLUSIONS

Electrodiathermic treatment of lesions of the uterine cervix is more efficacious than topical medical applications.

Electrothermic treatments of cervical lesions are more conservative than any of the surgical operations when it is feasible to apply these methods.

Electrodiathermic treatment of lesions of the uterine cervix does not interfere in any way with successful plastic operations for the repair of extensive lacerations, but leaves a clearer and cleaner field for these procedures.

Electrodiathermic methods of treating very persistent and obstinate neisserian infection of the uterine cervical mucosa have proven most efficacious.

Electrodiathermic treatments of cervical erosions and the adjacent inflammatory tissue do not impair the sphincter action of the musculature of the uterine cervix nor interfere with its normal distensibility during parturition.

Electrodiathermy should receive the careful consideration and respectful recognition of all obstetricians and gynecologists who are interested in conserving the function of this regenerative organ, and in preventing the occurrence of cancer of the cervix.

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DISCUSSION

A. V. Pettit, M.D. (350 Post Street, San Francisco)—In the vast majority of all infections of the female generative organs, the cervix of the uterus is the portal of entry. The infection lies in the depths

of the mucus-secreting glands lining the canal from the vaginal portion to the internal os, the infection diminishing in intensity as the internal os is approached. The pathway of spreading infection from this focus is along the lymph spaces to the parametrium.

Effective treatment of cervical infections in the past has only been possible by destructive procedures such as actual cauterization or the conical enucleation of the gland-bearing area, by sharp dissection. Both of these methods are effective in that the infectious focus is removed.

Diathermy now presents a method by which infection of the cervical glands can be destroyed without also destroying the living cells of the cervix, if the invading organism is the gonococcus. The method is a rational one and depends upon the difference in resistance to heat possessed by the gonococcus and living tissue. The gonococcus is quickly killed by a temperature of 113 degrees F. in vitro and seems vulnerable to lower temperatures in the tissues of the body, while the epithelial tissue cells resist a temperature of 118 degrees F. and connective tissue a much higher temperature. Other frequently invading organisms such as the streptococcus, staphylococcus and colon bacillus resist temperatures as high as the tissues.

In my experience with diathermy, using the inactive mesh terminal encircling the lower abdomen and either the high vaginal or the intracervical active terminals at temperatures of 108 to 116 degrees F. for thirty-minute periods repeated from one to three times weekly, I have been unable to note any improvement in pelvic inflammatory lesions which were due to organisms other than the neisserian. On the other hand, this method of treatment has been very effective in destroying the evidence of gonorrheal infection of the cervix, urethra and internal pelvic organs. The internal effects noted seem to me to be due to the destruction of the infection in the cervix rather than to any deep effect of the heat.

The treatment of other cervical lesions such as erosions, papillary growths, polyps and nabothian cysts by using the destructive or coagulation effects of diathermy are as satisfactory in my hands as the actual cautery, the varying degrees of heat and its penetration possibly more delicately controlled with the high frequency.

In the treatment of cervical malignancy, diathermy of course plays a minor rôle. It is useful in removing fungating masses of carcinomatous tissue in order to facilitate the proper distribution and placement of the radium capsules or needles. In removing sections of suspected tissue for microscopical diagnosis I prefer the knife to the curet, the site being cauterized either with the actual cautery or the high frequency.

Resistance by the medical profession to the adoption of diathermy as a valuable method in the treatment of disease is understandable and, I believe, wholly justifiable in the face of the rather extravagant claims by many of the proponents, and especially in the absence of well-presented case reports and pathological evidence. The use of diathermy marks a distinct advance in our conservative treatment of gonorrhea in the urethra, cervix, and indirectly of the internal pelvic organs. In its destructive effects it is probably superior to the older electric cautery.

R. H. Shippey, M. D. (Metropolitan Building, Long Beach)—The situation of the uterus renders it an ideal organ for treatment by electrodiathermy. Following the application of coagulation, desiccation or carbonization of the tissues we can always count upon adequate drainage which is a very potent factor in healing.

My experience is very limited in treatment by electrodiathermy. Having observed both satisfactory and unsatisfactory results in its application I have come to the conclusion that there is much good to be derived from its proper application; and I have come to the further conclusion that no one should practice this treatment without having had thorough preparation. This means that a surgeon should at all times know the extent to which it is being applied and whether it is performing its mission, as certainly much harm might otherwise be done. A point brought out by Doctor Mikels is to my mind of great importance, viz., electrodiathermy treatment of uterine cervical lesions in pregnancy. All who do obstetrics will agree, I am sure, that we are confronted a great many times with a pregnant uterus having the cervix either badly torn or eroded. Fortunately we have been in a position to observe some of Doctor Mikels' work in this line, and the results have been most satisfactory. We believe that much good should come from this form of treatment if for no other purpose than to prevent the secondary puerperal infections and complications.

Frank W. Lynch, M. D. (University of California Hospital, San Francisco)—Diathermy is rapidly establishing a place in the treatment of certain chronic inflammatory conditions of the cervix that are now believed to favor the development of cancer. There is no doubt whatever that as such it has accomplished much good and made unnecessary many mutilating cervical operations upon young women in the child-bearing period.

The method is comparatively new, since until quite recently the instruments have not been without fundamental objections. Consequently it must have a long trial before all of its good and bad points can be properly evaluated. The many good points are elaborated in Doctor Mikels' paper as are many proper restrictions. There can be no objection to Doctor Mikels' conclusions.

Personally I feel that the future will register less objection to the method than to those who will attempt to use it for purposes for which it was not intended, namely, the treatment of acute, or subacute neisserian infections, and of malignant disease.

While I have seen many good results from the treatment I have seen some bad ones, such as pus tubes following cervical treatment presumably of fairly acute cases, and also cervical carcinomas which were activated by the diathermy. Therefore I feel that all who take up the method should be acutely conscious of its restrictions as Doctor Mikels has indicated, and should never treat cervical lesions even remotely suggestive of carcinoma without first making frozen sections. This, of course, would turn many candidates from the office to the operating room for treatment, an objection not vital to my mind.

The difficulties attending the recognition of early carcinoma are many, as I well know, since three times have I learned from laboratory sections that cervical tissue removed by me as benign at operation were in reality early carcinoma. Fortunately no loss of life resulted as the error was corrected in time, but always with unnecessary pain. As a result I always make frozen sections of all remotely suggestive cases before undertaking treatment. This should invariably be done with diathermy cases, since the tissues are destroyed and the laboratory cannot subsequently correct the diagnostic error.

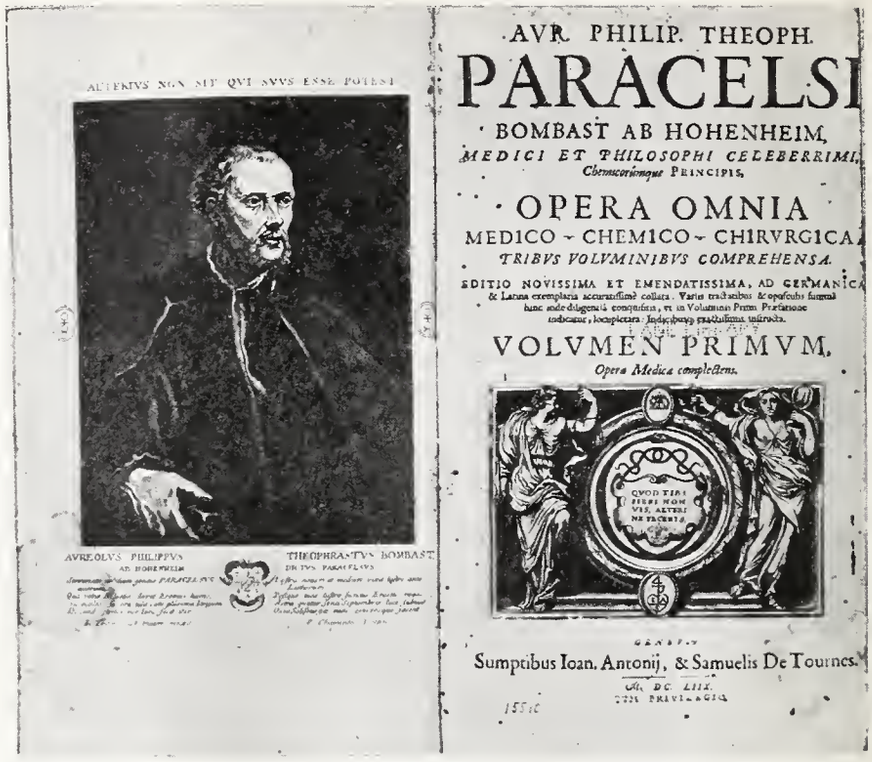
I am fully aware that cervical polyps are not thought to carry malignant areas and as such can be snipped off in the office and the base burned by the cautery or, better, diathermy. Personally, however, I have seen many carcinomatous areas in the bases of such polyps and therefore reserve all cervical polyps for surgical procedures as I do cervical lesions in women past the child-bearing age.

Yet even with the restrictions cited by me I feel there is a fairly large field for gynecological diathermy. I am much interested in Doctor Mikels' treatment of the infected cervix in the pregnant patient. There is no doubt of the threat occurring in labor if the vagina contains many streptococci, even though I would hesitate so to treat it.

Doctor Mikels (closing)—The purpose of this paper is to establish the efficacy of electrodiathermy in the treatment of many important uterine cervical lesions which were heretofore disregarded or radically removed by surgery and to emphasize its limitation so that this method will not fall into disrepute. Doctors Pettit, Shippey and Lynch have recognized the superiority of this method in the conservative treatment of cervical lesions, and by doing so have augmented the professional interest in rational electrotherapy.

As the knowledge of the indications and the limitations of electrodiathermy are acquired this method will find a proper place in our therapeutic armamentarium. Statistical deductions are not essential in substantiating the claims made for its efficacy, since concrete examples of excellent results and the clearing up of impending and apparent secondary complications have so frequently and consistently occurred in properly selected cases.

The alertness and precision in the early recognition of suspected malignancy of the uterine cervix will obviate the unwarranted hazard and the jeopardy to which many women have been subjected. The burden of responsibility rests with the gynecologist. This responsibility should be associated with scientific and conservative action. If it can be so done, then this small contribution will not have been without avail.



THE LURE OF MEDICAL HISTORY

PARACELSUS

By Jean Oliver, M. D.

"FOR the two years that I lived intimately with him, he gave himself up both night and day to debauched drunkenness—in fact it was almost impossible to find him two successive hours except completely drunk. . . . He boasted of knowing occult things and pretended to announce in advance the course of events. . . . As to his 'laudanum' he praised its efficacy to the point of affirming without the least hesitation that with this remedy he could raise the dead"—this from his secretary, Oporin.

"He maintained that his sword, which he had received as a present from an executioner in Germany, imprisoned in its handle a familiar genie called Azoth. The sacred gauge of his supernatural power, he kept this sword night and day by his side. Moreover when separated from this talisman, inspiration failed him, his prestige and the fascination that he exerted on the mind of the crowd vanished."

"Often we would see him arrive drunk at the hall where he gave his courses, holding in one hand the famous sword and with the other leaning against a pillar. In this attitude he displayed the brilliance of his wisdom in an improvisation embellished with the coarsest invectives."

These are but a few of the opinions by his contemporaries on the character of Philip Aureolus Theophrastus Bombastus von Hohenheim, called Paracelsus. Hardly the picture of a reformer, and although these opinions may no doubt be discounted on the basis of the antagonism which Paracelsus aroused in the profession of his day, still there remains enough to demand explanation from his supporters. His name in fact has entered into two languages as a term of reproach. Even now one finds in bookshops his works among the "esoteric" philosophies, for he is still a support for the Rosicrucians and other modern devotees of the astrological "sciences," with his talk of sylphs and salamanders, his ens astrale, the influence of the stars "which surround the earth as the shell of an egg and contaminate the air with their poisons," and his presiding Archaeus which "lives within us, the microcosm, and is the dispenser and compositor of all things."

There is of course the obverse of the medal. His attack, though not in the gentlemanly manner to say the least, on the authority-ridden profession of his day was a step which took a courage we can hardly appreciate. He reformed chemistry and introdoced its use into medicine—described zinc and originated the term "reduction" as applied to chemical processes. His conception that the human body too was composed of chemical substances and operated in part at least by chemical procedures was a foreshadowing of the modern physicochemical theory of vital processes. He was indeed an alchemist, but of a different stamp than his predecessors. For he says, "Many have said of alchemy that it is for making gold and silver. But here such is not the aim, but to consider only what virtues and powers lie in medicines." And again—"for the baker is an alchemist when he bakes bread, the vine grower when he makes wine—whoever brings that which occurs in nature to the point which was intended for it by nature, he is an alchemist." And his "arcana," though fantastically termed, are at least a search for

active principles in the elaborate and massive mixtures of his day. The term "laudanum," whether opium or not, we owe to this attempt at simplification.

Is it possible, then, to reconcile these two different pictures and, being charitably inclined, rationalize the man's obvious faults with his equally apparent virtues. It is not enough, as some critics have done, to sweep away all of the contemporary criticism as the product of an outraged dignity on the part of the profession, or to explain Paracelsus occult vagaries by the contention that it was the style of the times. Vesalius indulged in no such nonsense. The answer to the enigma of his character must lie within the man himself.

We start with a remarkably brilliant mind, associated with an almost abnormally voracious curiosity and desire for knowledge. His early life, from his own accounts, is entirely disorganized. He wanders over the entire continent, grasping at knowledge wherever he can find it, not excluding, so he states, the humble contribution of tavern keepers and gypsies. His status when he at last wishes to put in practice this knowledge is entirely irregular—he has no degree and his vagabond life and dubious manners expose him to still greater criticism from a cultured and extremely formal profession. The attitude of any organized body of learning to the entrance of such a character into its midst can be readily imagined; and the response which he made is also that which would naturally follow—a violent "defense mechanism" which displays itself in a combination of self-aggrandizement and vituperation. And as he continually is thwarted in these encounters with authority, he can but draw still further on his apparently inexhaustible store of invective and, to use the word his name has given us, bombast.

His scientific vagaries are also explainable by the same hypothesis. His ardent craving for knowledge, for an understanding of things in a more rational way than that of the ancients, drives him on. But unlike Vesalius he has invented no technique for its acquisition—he can only repeat, on the one hand, the putrefaction, calcination, reverberation, tinction, and reduction of the medieval alchemist, gleaning a few isolated facts in his course; and on the other, in his attempt at an explanation of phenomena which he could not analyze, lacking a technical method, to reach still higher flights of transcendental pseudoscience.

A man whose aspirations are those of a genius—whose mind in its brilliancy is capable of the utmost, baffled at every turn. Such was Paracelsus. Denied the right to pursue his work under proper conditions by his contemporaries, denied by nature the inspiration of a method that would enable him to follow to a logical conclusion the visions that he dreamed. Enough to turn a less sensitively balanced mind to madness.

The illustration which we show is from his collected works. A remarkable portrait, though probably not by Tintoretto, as the subscription states, for the artist was only 18 years old when Paracelsus died. In any case, it is a fitting frontispiece to a beautiful, if queer, book, that is worth investigation.

CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

PREVENTION OF INJURY TO THE MUSCULOSPIRAL NERVE

CASE REPORT

By E. B. Towne, M. D.
San Francisco

THE musculospiral is the most vulnerable nerve of the extremities. Many of its injuries are avoidable, and some which cannot be prevented are easily corrected. The patient with a wrist-drop has a useless hand, and his period of disability, if the nerve has been divided, is upward of a year after resection and suture. There is, therefore, a needless economic loss, as well as a fertile field for legal complications, in avoidable injuries of the nerve.

The course of the musculospiral nerve and its relation to the humerus account for its marked susceptibility to traumatism. As it winds around the bone in the musculospiral groove it lies directly on the periosteum. It may be lacerated by fractures of the middle third of the humerus, or caught between the fragments during closed reduction, or compressed by callus during the process of healing of the fracture after closed reduction. These are unavoidable injuries. Those which can be prevented are always the result of operation, either for open reduction of fresh fractures, or for non-union, or for osteomyelitis of the humerus. An improperly placed incision may divide the nerve, or the unseen nerve may be included in a suture or crushed by a hemostat, or it may be compressed by callus after it has been exposed and protected during open reduction of a fracture and then allowed to lie in contact with the ruptured periosteum.

UNAVOIDABLE INJURY

The following case reports illustrate two types of damage to the nerve which cannot be avoided:

Case 1. *Compression Paralysis Due to Callus Formation After Closed Reduction of the Humerus*—A man aged 24 was seen May 20, 1925. Two months previously he received a transverse fracture of the middle third of the right humerus. A closed reduction was done. About two weeks later a wrist-drop developed. Examination showed a healed fracture in good position. The supinator longus and the extensors of the wrist, thumb, and first phalanges of the fingers were paralyzed. At operation the nerve was dissected out of callus, its conductivity was established by faradic stimulation above the area of compression, and it was buried in the triceps muscle to prevent further contact with the callus. There was complete recovery of function of the paralyzed muscles three months after operation.

This paralysis was obviously unavoidable. Once it developed, the diagnosis and the indications for operation were clear. The only certain method of protecting a nerve from further compression is to place living muscle between it and the callus.

Case 2. *Destruction of a Section of Nerve by Inclusion Between the Ends of the Fractured Bone*—A man aged 28 was seen January 9, 1925. In March, 1924, he received a transverse fracture at the junction of upper and middle thirds of the left humerus. When the

splint was removed early in June he had a wrist-drop. He did not know whether this came on at the time of injury, or immediately after reduction, or later. June 19, 1924, the nerve was explored, and the report to the insurance company did not indicate that it had been left in a condition favorable for recovery. Examination showed a complete motor and sensory paralysis. At operation, February 6, 1925, there were two neuromas, between which the nerve disappeared into the bone at the site of the healed fracture. Resection and suture was done. The first evidence of returning function was seen in January, 1926, eleven months after operation. Eighteen months after operation extension of the wrist and fingers was normal, but extension of the thumb was still weak.

The delay of three months before the unavoidable injury of the nerve was discovered shows the importance of always examining for wrist-drop before and after closed reduction of the humerus.

AVOIDABLE INJURIES

Case 3. *Instrumental Damage to Nerve During Operation for Osteomyelitis of the Humerus*—A man aged 30 was seen November 17, 1924. Seven days before, he had been operated on for an old osteomyelitis of the right humerus. An incision was made through the lateral head of the triceps, from a point one inch above the external epicondyle upward to about the middle of the humerus. The surgeon said that the wrist extended when he started to close a hemostat to control bleeding at the upper end of the wound. The hemostat was immediately opened. After operation there was a wrist-drop. Examination showed paralysis of the supinator and the extensors of the wrist, thumb, and first phalanges of the fingers. The history pointed to bruising rather than to division of the nerve. Under postural and nutritional treatment he recovered normal function in four months.

This injury resulted from an unwisely placed incision. The surgeon knew that the upper end of the wound was very close to the nerve, which he would have avoided had it not been for bleeding from the superior profunda artery. A. K. Henry, in the British Journal of Surgery for July, 1924, described an incision for exposure of the entire shaft of the humerus without danger to any nerve. The bone is approached along the anterior border of the deltoid, and then through the outer fourth of the brachialis muscle. The outer strip of brachialis forms a buffer between the rugine and the musculospiral nerve. This anterior incision is entirely safe, but lateral and posterior incisions are always dangerous unless the nerve is exposed and retracted.

Case 4. *Inclusion of Unexposed Nerve in Suture During Open Reduction of the Humerus*—A girl aged 12 was seen December 8, 1923. She fractured the left humerus October 29, 1923. An open reduction was done the same day. The child's parents understood that the fragments were sutured with kangaroo tendon through drill holes. Extension of the wrist was normal before operation, but immediately afterward there was a wrist-drop. Examination showed a musculospiral paralysis. There was a scar from the insertion of the deltoid nearly to the external epicondyle. X-rays showed a spiral fracture, with two drill holes in each fragment. At operation, December 10, 1923, the nerve was compressed in scar tissue under the upper two-thirds of the previous incision, and, at a point opposite a drill hole in the bone, it was further constricted by a narrow band The nerve was freed, its conductivity was demonstrated by faradic stimulation, and it was buried in the brachialis muscle. Function began to return in February and was normal in May, 1924, five months after operation.

This injury could have been prevented by exposing the nerve during operation, and protecting it from later compression by transposing it into a bed of muscle.

Case 5. *Compression of Nerve by Callus After Open Reduction of the Humerus*—A man aged 34 was seen July 16, 1920. May 23, he had received a double spiral fracture of the right humerus. After two unsuccessful attempts at closed reduction an open reduction was done, May 29. The incision was through the middle head of the triceps muscle. The musculospiral nerve was dissected free and carefully retracted, and the fragments of bone were fixed in position with three silver wires. The nerve was then dropped back in its normal position. After operation and until June 20 the nerve functioned, but on June 28 he had a complete wrist-drop. At operation, July 17, the nerve was dissected out of callus, its conductivity was demonstrated by faradic stimulation, and it was buried in the triceps muscle. Function began to return in five weeks, and was normal in four months.

The surgeon who did the open reduction used great care in exposing and protecting the musculospiral nerve during operation, but he failed to protect it from callus. There is some risk of compression by new bone after a closed reduction of the humerus, but this danger can always be avoided after an open reduction by placing live muscle between the bone and the nerve.

COMMENT

These case reports illustrate all of the common injuries of the musculospiral nerve except gunshot and stab wounds, which are omitted because obviously unavoidable. The paralyses in Cases 1 and 2 were also not preventable, but they are included in order to emphasize the importance of examining repeatedly for wrist-drop before and for weeks after a closed reduction of the humerus. If this is always done there can be no difficulty in deciding whether a paralysis is due to compression of the nerve by callus and therefore easily corrected, as in Case 1, or to laceration or direct compression of the nerve, as in Case 2. Needless delay in operating is eliminated if the diagnosis and prognosis are clear, because compression by callus calls for immediate operation, whereas about four months must elapse before one can be sure whether an immediate paralysis is recoverable, as in Case 3, or irrecoverable, as in Case 2.

The last three cases illustrate avoidable injuries. There was direct surgical traumatism of the nerve in Cases 3 and 4. In Case 3 this could have been prevented by using Henry's incision, which is most desirable when operating for osteomyelitis of the humerus. This incision may also be used for open reduction, but, though it protects the nerve from operative injury, it does not insure against later compression by callus if the periosteum is torn in the musculospiral groove. It is better to expose and retract the nerve during an open reduction. This was not done in Case 4, and hence the operative trauma. It was properly done in Case 5, which shows the necessity of placing muscle between the reduced fracture and the nerve to prevent compression by callus.

CONCLUSIONS

1. The function of the musculospiral nerve should be examined and recorded before and after closed or open reduction of the humerus and operations for osteomyelitis of the humerus.

2. If the periosteum of the musculospiral groove is lacerated by a fracture, there may be a delayed paralysis due to compression of the nerve by callus. This is to be avoided, in an open reduction, by placing live muscle between the bone and the nerve. It may be corrected, after closed reduction, by the same procedure.

3. Henry's incision, which leaves a buffer of brachialis muscle between the rugine and the nerve, gives the best insurance against injury of the nerve during operations for osteomyelitis of the humerus.

4. Henry's incision is not desirable for open reduction of fractures of the humerus. The safest procedure is to expose the nerve, retract it, and protect it from callus by transposition into a bed of live muscle.

350 Post Street.

PREMATURE RUPTURE OF FETAL MEMBRANES

CASE REPORT

By J. L. Pritchard, M. D.
San Jose

ONE of the complications of delivery which not uncommonly adds greatly to the length of labor, with its resultant deleterious effect upon the mother and the baby, is rupture of the fetal membranes prior to the onset of labor, or at any time before the cervix is fully dilated. It is not always possible to determine the cause of premature rupture of the membranes. In those cases which occur prior to the onset of labor, one should search for some defect in the membranes themselves. In a recent instance in which the membranes had ruptured spontaneously at the eighth month a pathological area about 7 cm. diam. was observed on one margin of the rent. The specimen was excised and sent to the laboratory. The pathologist reported that the thickened, gummatous-appearing tissue was due to the implantation of a placenta on the membranes, and that there was a papyraceous fetus in the membranes adjoining the placental tissue.

The question of superfetation arises in this instance because a placenta and papyraceous fetus were incorporated in the membranes of the pregnancy which came to term. Of course the possibility of a twin pregnancy is not overlooked, but it is rather unusual to have a fetus and placenta so situated. However, to prove superfetation it would be necessary to find two living fetuses of different ages, and two corpora lutea of pregnancy in different stages of development corresponding to the ages of the fetuses (Maury).[1]

It is most commonly believed that all cases of papyraceous fetuses are simultaneous multiple pregnancies (Moss).[2] However, it is easy in this case to visualize a fertilized ovum implanting itself on the membranes of an existing fetus prior to the fusion of the decidua vera and reflexa. Then, too, one might logically hold that the implantation had taken place on the uterine wall as usual and later, due to compression or disease, had become separated from the uterine wall and then attached to the membranes of the normally growing pregnancy (Long).[3]

This mother had had seven children, two of whom were twins. She was 34 years old, a Jewess, in good physical condition, having had the usual diseases of childhood with no serious illness since. Previous pregnancies and deliveries had been quite normal.

The fetus was flattened out, being about 4 centimeters long and 50 millimeters thick. Macroscopically it was not possible to make out a cord. The specimen (fetus and placenta) was entirely separate from the placenta of the pregnancy which came to term, being at least 16 centimeters distant therefrom. The rent occurred along the margin of the specimen which consisted of placental tissue.

While the premature rupture in this case cannot be definitely attributed to the implanted extraneous placenta, the presumption is strongly in favor of such a contingency. Judging from the appearance of the specimen one would be compelled to admit that the placenta had endeavored to function in its unusual and precarious situation. Consequently it must have weakened the membranes, as it is the nature of placental tissue to invade the viscera to which it becomes attached.

The complication of a too early rupture of membranes is serious enough to warrant a careful investigation of each case. While, as previously stated, the actual cause is many times obscure, light is often shed on the subject by finding some pathological tissue at the point of rupture or along the line of cleavage.

304 Sainte Claire Building.

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BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

CLINICAL SIGNIFICANCE OF AMEBIASIS AND ITS RELATION TO DYSENTERY

John V. Barrow, Los Angeles—Until very recently the clinical manifestation of amebiasis was considered predominantly that of dysentery. The total symptomatology of the protozoa-infested patient has been more carefully compiled in recent years. The aggregate sum of knowledge strongly suggests the establishment of a definite syndrome.

We now feel that dysentery in these cases concerns itself with irritative intestinal lesions capable of disturbing the peristaltic mechanism. When ulceration or excoriation of the bowel is extensive enough to irritate this mechanism, dysentery supervenes. This clinical condition does not obtain in more than 20 to 30 per cent of all cases of amebiasis, and I personally believe the ratio is below 20 per cent. Taking into consideration the whole clinical history and clinical findings, a much broader significance of amebiasis, *i. e.,* the probable absorption of foreign products, especially foreign proteins is suggested to me. All protozoa are protein in composition. Their bodies disintegrate easily and their substance (protein) is water soluble and ready for immediate absorption from the bowel. They grow in that part of the intestines devoid of generated ferments, consequently their total protein content unchanged is capable of being absorbed directly. While they are living they can only exert an irritative influence, because living protoplasm is unabsorbable. When their bodies die and disintegrate, then follows the absorption of great quantities of foreign protein in molecules that are very complex, and the absorption of this can reasonably be expected to produce pathological changes such as occur in the reactions of allergy and anaphylaxis.

The application of this principle explains many of the clinical manifestations of amebiasis without dysentery. It demonstrates the part it may play in influencing other physiological and pathological states without being in itself the whole cause. While the ameba may migrate to various parts of the body and establish colonies in many tissues, its biological habitat is essentially the colon, and any new location is by adoption only.

The above conception of the subject associates clinical amebiasis not only with dysentery, but also with metabolic disturbances, endocrine disfunctions, iritis, arthritis, and other chronic diseases.

* * *

Alfred C. Reed, San Francisco—From the clinical standpoint, several points are in need of emphasis. The diagnosis of amebiasis is not an easy task and sometimes requires unusual attention. It can best be made by the discovery of the resting stage of the parasite, the cyst, in stained preparations. The *Entameba histolytica* is by far the most dangerous of the group, and its presence invariably means disease. The old conception of the ameba "carrier" has given way to a conception of a parasitic colony invading the human host chiefly or entirely through the intestinal tract. The amebic forms which alone can reproduce the disease in another human host are the resistant, resting forms, the cysts. These resistant forms may contaminate food or drink, especially from the dirty hands of infected food handlers. In the human host the parasite lives to its own best advantage when it does not disturb the domestic economy of the host, that is, when there is neither diarrhea nor dysentery. It is discovered under these conditions by the irregular appearance of cysts in the stools. When the number of bowel movements is much increased the trophozoites or active forms are found. These latter are difficult to identify and rarely are sufficient alone for a complete diagnosis.

Amebiasis is extremely common in California and is thoroughly endemic. It is a dangerous disease always, and every person harboring the parasite must be considered not only a sick individual, but also a public health menace. *Entameba histolytica* is not clinically self-limited, but will infest the human host continuously until eradicated by proper drug treatment.

This parasite has been demonstrated in blood vessels, lymph channels and tissue spaces as well as in many tissues themselves. Its ability to invade the body beyond the intestinal mucosa has been proved and there is no known reason why it may not invade almost any tissue of the body. The occurrence of dysentery as a symptom of its presence is primarily a matter of latitude and warmth of climate. The dysenteric syndrome may be produced by a large number of very different causes, and "dysentery" has changed from a diagnosis to a symptom.

Special caution is necessary in the use of the powerful drug emetin and its preparations. Poisoning is easily produced by excessive dosage, and this excess may be either the result of one dose or cumulative from a series of small doses. The action of emetin is far from clear, and some of the therapeutic results claimed from its amebicidal use may be direct actions of the drug itself irrespective of any parasite. The same caution holds for the use of stovarsol and other arsenical preparations. Serious poisoning is not infrequent and they should be administered under careful oversight and in moderate dosage only. It is probable that length of treatment time is just as important as in the case of malaria and also that

resistant infections are frequently due to invasion by the parasites of the appendix, bile system, deep tissues of the intestine and other parts of the body.

The present advances in knowledge of amebiasis are due to present methods of culture *in vitro* and in animals, and radical changes will doubtless appear in the near future in our understanding of this very important group of diseases. Preventive treatment along the line of raising resistance to this class of infections may prove our most effective mode of combat.

* * *

Stuart Davidson, San Francisco—How often does the physician consider amebiasis as the cause of vague headaches and arthritic pains, etc., when there is little in the history to focus his attention on amebiasis as a causative agent?

When we consider that amebae have been responsible for symptoms almost as varied as those of lues; that they have been the basis of vague pains throughout the body; of anemia, neuralgia, iritis; fevers resembling malaria; of duodenal ulcers; chronic pancreatitis; cholecystitis; hepatitis; coughs and expectoration with bloody sputum; even of skin lesions, we must expect to find amebae frequently and not alone when we have an acute fulminating type of dysentery. Amebae may be present in a patient with hardly any diarrheic attacks, and amebae may also be the cause of attacks of mild diarrheas spread over a period of years, even though blood and mucus have not been present in the stool.

At the present time, after participation in the World War by the United States, and the resultant likelihood of infection of the men in France and their subsequent spread as carriers after discharge over the United States, we have need to see that the diagnosis of amebiasis is not discarded until we have made repeated and thorough search of feces, proctoscopic examinations and duodenal content. In dysenteric types of stools, vegetative forms are found in the slimy, bloody mucus portions, whereas cysts are mostly found in the solid portions. In our diagnosis emphasis must be placed on cysted as well as the vegetative organisms.

Our treatment necessarily must be thorough and spread over a considerable period of time, even though the symptoms presented at the beginning are cleared up rapidly. It is necessary to keep the patient under our guidance for so long a period of time, examining carefully stool and duodenal content, since one course of treatment may not eradicate the amebae. Treatment with emetin as well as neoarsphenamin or stovarsol produces good results.

In conclusion we might say that amebic infection does not necessarily mean acute dysentery and that amebic infection may appear under many guises and as the basis of many obscure complaints. Repeated examinations should be made of duodenal content, feces, and by the proctoscope. The combined treatment of emetin and neoarsphenamin periodically, with a check-up at intervals to prevent recurrences, is most efficacious.

John F. Kessel, Los Angeles—Until recently dysentery and amebic liver abscess were the only commonly recognized expressions of amebic infection, but within the last few years a new interpretation of amebic disease has forced itself upon us and now chronic amebiasis is becoming generally recognized as an important clinical entity. There are a number of unsolved questions concerning this intricate subject and consequently there is considerable difference of opinion among those who are working in this field.

Just what percentage of those persons who harbor the dysentery ameba in their bowel actually show clinical symptoms of importance is one of the questions still unsettled. It is very evident that the extent of clinical findings may vary in degree in different cases, ranging from the person with slight or negligible symptoms and who may be described as a "carrier" to the person with multiple disorders which may be traceable either directly or indirectly to the amebic infection. Certain gastro-intestinal disorders, for instance, may be attributed directly to the impairment of the bowel by amebae, while a number of other clinical symptoms which are often associated with amebic infection may possibly be only indirectly the result of the infection. As for example, Sir Leonard Rogers (1922) draws attention to the common association of cirrhosis of the liver and amebiasis and favors the idea that the ameba which have gained access to the liver are the direct cause of the cirrhosis. Others working in the tropics today, however, who find this same association suggest the hypothesis that the amebae are not directly the cause of the cirrhosis, but rather that they injure the bowel, preparing the way for the absorption of toxins through the portal system to the liver, thus causing the cirrhosis indirectly.

Iritis is another disturbance commonly associated with amebic infection and here also it seems probable that the amebae may be only the indirect cause. Again, the working hypothesis that there is a relationship between Ely's second type of arthritis and amebic infection seems to be apparent from the data presented by those who are working with the subject. However, experimental evidence is necessary to show whether this effect is caused directly or indirectly by the amebae.

Another question of supreme consideration is the relative importance of racial virulence of the amebae and of host resistance to the invading parasite. Host resistance may involve further problems of (*a*) diet or vitamin deficiency, (*b*) symbiotic relationships with other animal parasites or bacteria, and (*c*) the effect of exposure or climate. Among those who hold that a difference in the virulence of the parasite is of greater importance is Brumpt, who maintains that there are two species of amebae morphologically identical, one being pathogenic and the other non-pathogenic. Craig on the other hand believes that host resistance is the more important factor.

In recent experimental work completed by the writer in Peking Union Medical College and now in press, a series of kittens which were infected

with different size races of the human dysentery ameba, obtained both from cases showing no or negligible clinical symptoms and from cases exhibiting acute amebic dysentery, all developed similar clinical and pathological findings. The writer concludes from these results that factors other than differences in virulence of the parasites are the more important in the production of disease.

The questions here mentioned merely indicate a few of the many problems associated with the important subject of amebiasis which are waiting to be solved in a definite experimental manner. Such solution demands the closest cooperation between the clinician and the laboratory investigator.

* * *

Herbert Gunn, San Francisco—For years amebae were rarely thought of by physicians except in the presence of a diarrhea or dysentery. When amebae were found in the stools of persons not suffering from diarrhea these persons were classified as carriers, and if diarrhea or dysentery was present the disease was called amebic dysentery. This viewpoint is still held by some at the present time, especially in England.

Amebiasis is a much more comprehensive and accurate term, and it should include all cases infected with *Entameba histolytica,* carriers as well.

The symptoms of amebiasis are protean, and a careful investigation into the history will leave but few cases to be relegated to the carrier class. Dysentery may be a symptom of amebiasis, but it occurs in only a small percentage of cases. In the tropics it would appear that dysentery is a more frequent symptom, but one must take into consideration the possibility of complicating factors such as bacillary dysentery before drawing definite conclusions in the matter.

Carriers are generally recognized as a source of danger to the community, but the infection is likewise of grave import to themselves, as they may, without previous symptoms, develop such serious conditions as liver abscesses.

The majority of amebic cases present a history of disturbance in some part of the gastro-intestinal tract. It is well recognized that the amebic infection may be more or less localized to certain parts of the large bowel which readily explains why the symptoms are not always the same. The same thing is observed in carcinoma of the intestines. The lower down the ulcerating growth the more acute are the dysenteric symptoms. Undoubtedly some of the symptoms observed in amebiasis are produced by toxins emanating from the amebae or from the action of the amebae on the tissues.

There is no syndrome of symptoms characteristic of amebiasis. It is my firm belief that all persons harboring *Entameba histolytica* should be cleared of the infection as soon as possible.

While amebiasis is of great importance to the clinician he must be on his guard or he will be led into serious error by the publications of enthusiasts which have appeared quite frequently in the literature since the great war.

Some exaggerated statements as to the incidence would lead one to believe that about one-quarter of the population is harboring the parasite. Enthusiasts have discovered the parasite gamboling about merrily in nearly every part of the body. Gross errors of this sort are inexcusable, but nevertheless they are being accepted, more especially in the United States. It may be possible for *Entamebae histolytica* to invade other tissues than the large bowel, the liver, and the lung when abscess is present, but it occurs so rarely that it can be practically dismissed from consideration by the clinician.

Growing Shortage of Country Doctors—Memorial adopted at the annual session of the National Grange:

According to the findings of a survey made for the General Education Board by Lewis Mayers and Leonard V. Harrison, published in 1924, there were approximately 33,000 physicians in places of 1000 inhabitants or less in the United States in 1906. In 1924, according to this report, this number had been reduced to 27,000, showing an actual loss of 6000 rural physicians in eighteen years. More recent investigation shows that almost one-third of the towns of 1000 or less, throughout the United States, which had physicians in 1914 had none in 1925. The average age of rural doctors throughout the country in 1925 was 52 years. Since the average age at death of American physicians is 62 years, it will be seen at a glance that the present generation of country doctors will have practically disappeared in another ten years.

Notwithstanding this situation, we find that the Commission on Medical Education, which is now studying the subject, reports that with the medical school capacity we have in the country at the present time, and their graduates averaging 27 years of age, the number of physicians in practice is actually decreasing and that their number will not regain its present size of 130,000 until 1965. In the meantime the population of the country, the commission estimates, will have increased from 115 millions to 164 millions.

The reason for this situation is not far to seek, and is hinted at by the committee in question. Under the minimum requirements which have been established, the prospective doctor must spend seven years after leaving high school in securing his education. Aside from the long period of pupilage, he must assume excessive financial responsibilities before he can begin the practice of his profession. This automatically operates to close the doors of the medical profession to thousands of those who possess all the natural qualifications to make them successful physicians under a more reasonable system of preparation.

We are in hearty accord with a distinguished former president of the American Medical Association, Dr. William Allen Pusey, when he says: "If the poor boy, who is used to the simple life and to effort rewarded only by the simpler luxuries, cannot enter medicine, who is going to do the ordinary work of medicine in the city or in the country? The man who can live without productive labor until he is 25 or 30 years old, who can spend $8000 or $10,000 on his higher education, is not looking for an ordinary practice among ordinary people in the cities, or for any practice in the country."

If the supply of country doctors is to be replenished, these doctors must come from among the young men and women of the country districts, as was the case in former times. The type of graduates now being produced by our medical schools will not settle and practice in the country districts. This is conclusively proved by the experience of recent years.—National Grange.

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EDITORIALS

HAPPY NEW YEAR!

Ere this issue of CALIFORNIA AND WESTERN MEDICINE is placed in the mail the Christmas season of 1927 will have come and gone; and we trust, have left its joys and pleasures with each of the members of the California, Nevada, and Utah Medical Associations.

Your journal wishes to extend to each of its readers the felicitations and best wishes for a Happy New Year; and feels that at this season it may extend this kindly feeling from every member to all other members of our respective state associations.

* * *

Some of us may have made distinct resolutions in regard to our aspirations and conduct for the year 1928. But whether to ourselves or to others, we have put such thoughts of new resolves in tangible expression, after all matters but little.

It may be taken for granted that during this current year each of us desires to give to his patients the best of service; that each of us hopes to add to his knowledge and skill in the art and practice of medicine so that at the end of the year each of us will be an abler physician than at its beginning; and that in our professional life from day to day each of us will not only be alert to his responsibilities to his personal groups of patients, but will let his vision, hands and heart also respond to the needs of organized medicine at large.

* * *

Organized medicine stands sponsor and protects the legal and economic rights of each of us; battles for the perpetuation and improvement of our standards of education and practice; makes possible through the above a pleasanter and more lucrative practice than would be otherwise possible; and obligates each and every one of us, no matter what our professional position is or what we ourselves think it to be, to return this support of our personal interests by generous, reciprocal support of the aims of organized medicine.

So again, to each and every one, on behalf of CALIFORNIA AND WESTERN MEDICINE, a Happy New Year, and likewise a successful one in both the personal and collective practice in medicine.

TO THE NEWLY ELECTED OFFICERS OF COMPONENT COUNTY SOCIETIES—SOME THOUGHTS AND SUGGESTIONS FOR THE YEAR 1928

Newly elected officers of component county medical societies, the majority of whom were elected in December, in most instances assumed office on January 1.

Each colleague who has been thus elected should appreciate that he has been the recipient of a distinct honor. With that honor tendered him by his colleagues goes, however, a distinct obligation of service to organized medicine.

For organized medicine is the expression of and spokesman for the medical profession, and the officers of the medical societies are the outward symbols and executives of organized medicine.

* * *

The calling of the healing art has many interesting phases. The physician in his daily work contacts largely with lay fellows, who in some one or other measure are not in good health. The physician's ministrations, which aim to restore such lay fellows to normal health and efficiency, make his a calling of mercy and of altruistic endeavor. But to do his work best for himself and his patients he must have knowledge and skill as well as kindly intent.

A doctor's relations to patients make his profession more than usually individualistic. So much so that, in the routine of his daily responsibilities, the physician often may have but slight opportunity to meet his professional brethren, and to talk over and consult with them on matters having an important relationship to himself or to the welfare of his guild.

The necessities of his calling make the physician, therefore, particularly dependent upon those whom he elects to office in his medical societies; and upon whom he must largely rely to be on guard to protect his own and his profession's scientific, economic and ethical interests.

That is why every officer of a component county medical society is under a heavy obligation to live up to the honor and implied service that has come to him in such official recognition. Members who do not wish to return generous service for honor generously conferred should not accept office in medical organizations.

* * *

The problems of organized medicine which confront the medical profession in this year 1928 are

not radically different from those existing in the last several decades. A perusal of the Twenty-Five Years Ago columns, printed in this journal, should convince any member of that fact.

The new officers of our county societies for the year 1928, therefore, will be confronted with problems analogous to those which faced their predecessors.

* * *

A proper realization of one's duties and a good start mean much in any enterprise. A considerable number of the newly elected officers may have had only a limited experience in the ways and means of procedures in county society activities. On that account they may not be averse to a brief survey of some of the fields of work which confront practically every county unit. Also those who have been in the harness of society work may be willing to check upon their own plans for this calendar year.

* * *

Out of our own past experience we are therefore tempted to call attention to the following items as being among those which will be worthy of serious consideration and action by county society officers:

1. *Meetings:*

A medical meeting may be said to consist of three parts: (1) scientific; (2) business; (3) social or fraternal (and this last is by no means the least, even though, to the detriment of medical organization, it seems so often overlooked by medical society officers).

* * *

The *scientific portion of the meetings* should aim to bring out live papers by local colleagues; and discussion should be free and frank, and when positive or in opposition should not lead to misunderstanding or ill-feeling.

We Americans can learn much from the English in this regard, because Englishmen can discuss subjects with one another with almost brutal frankness and opposition, and yet walk out of a meeting hall in good fellowship with colleagues who have been opposed; much as do lawyers, who having battled acrimoniously with one another in the courtroom, leave the courtroom arm in arm to take luncheon with one another.

The need of such a friendly attitude when sharp differences of opinion arise leads one to almost believe that debating societies might serve a very useful purpose in a medical school curriculum. The training in such debating societies would certainly be of as much service in after-graduation days as is a considerable amount of the abstruse and sometimes obtuse scientific knowledge for which there is found so little use in active practice.

In addition to the papers by local members, county society program committees should make use of the California Medical Association Extension Program Bureau and its excellent list of colleague speakers from other cities whose addresses cover a wide scope of subjects. A full roster of these speakers and the titles of their papers was printed in the October issue of California and Western Medicine, pages 537-539. Every program committee should scrutinize the bureau's lists, and aim at least four times a year to bring to the members of its own society the uplift that comes through exchange of opinion with such visiting colleagues.

* * *

The *business session* is the second phase of meeting activities to be considered. In regard to the routine business of meetings, do not let this overemphasize itself. Such problems in any and particularly in large societies are often best handled by reference to the officers as a whole, or to a proper committee or to the board of councilors of the organizations.

In regard to problems in medical economics, these matters also can be handled in similar fashion, unless the question at issue is of so broad a scope as to merit general discussion by the membership at large.

* * *

The *social or fraternal session or hour* is the third element of importance in a county society meeting. We doctors are very prone to forget that, by and large, most of us meet one another only occasionally; and that through lack of such personal contact we form prejudices at times against this, that or the other colleague which would be laughable if they were not often so pathetic and regrettable in their end results.

From the standpoint of the best interests of organized medicine (and that means always the best interests of every individual member of the profession) we are ourselves inclined to think that if the scientific session is 50 per cent of a medical meeting that almost all of the other 50 per cent should go to the cultivation of the social or fraternal relationships between the members of a society.

For let it be remembered and well digested mentally, that any physician seeking knowledge, in this day of the liberal use of printers' ink and medical libraries, can obtain at a minimum of effort and expense access to the literature on any and all subjects in which he may be interested to the full extent of the time he may be able to give for their study and thought; and that attendance at medical meetings as a routine is by no means the best way of acquiring scientific knowledge.

Let it also be equally well appreciated (and this is particularly the situation in the larger cities) how comparatively few of our members really know one another on a personal and good fellowship basis. Now there is no better way of breaking down such restraints to good fellowship and united action than by breaking bread with one another. That also is worthy of remembrance.

Our memory goes back to one large society where years ago we sponsored the expenditure of a very considerable amount of the society's funds in providing a buffet supper at the end of each meeting at which the members would linger at times for an hour or so until the lights were dimmed as a gentle reminder to please vacate the rented hall. At that time, with half the membership of that society than today, there was a turnout of members fourfold or more than at present. That greater attendance was not all the benefit by any means, for with those intimate contacts

developed much good fellowship and a very considerable esprit de corps. If your society has not tried this plan, permit us to urge you to institute it. If your society for some reason or other at some time discontinued it, permit us to urge you to agitate its reinstitution.

* * *

2. *Membership Campaign:*

Of some 7699 licensed physicians in California, some 4410 are members of the California Medical Association.

In other words, some 3289 licensed physicians and surgeons in our state are not members of medical societies of the counties wherein they have the right to practice.

It is certainly a very proper question for every one of us to ask of himself, why are so many licensed colleagues not associated with us?

Granted that some have retired from practice, that a certain number of others are for this, that or the other reason, not eligible according to our standards, it still must be evident that in this group of 3289 non-members there must be a very considerable number of colleagues who would benefit themselves, us, and the lay citizens of the state, if they were part and parcel of us.

Has your society in its own district made an impartial and broad-minded study of this problem? How many of such eligible practitioners are in your own county?

We are not so strong either in our county or state medical associations that we should be indifferent to these eligible colleagues who are now non-members. Every ethical, well-trained physician, should be of us and for us. Our aims are for a better and abler profession in order to give a better and broader service to the citizens of the commonwealth. We need the aid of every properly qualified colleague in California, and the aid of all such can do most good through the societies which collectively make up what is called organized medicine.

Why not determine in every one of our county societies that in this year 1928 we will endeavor to find out why such eligible non-members are not of us, and then take steps to bring the eligibles into affiliation with us?

For those who are in doubt as to how best to accomplish this end, reference is made to the editorial in the May, 1927 issue of this journal, page 665, wherein a practical plan that had been successfully tried in the past was outlined. We would urge officers and members alike to refer to this, and then early in this year (for the beginning, not the middle or terminal months, are the psychological months for a membership campaign) let us try to make our California Medical Association, through accretions of properly qualified new members in county units, develop into a still larger and outstanding state medical unit of our national association.

* * *

3. *Other Activities:*

There are many other phases of county society work which could be discussed at considerable length, but such discussion must be postponed for future occasions.

Do not fail, however, through proper committees or otherwise, to keep an alert contact on all *public health activities of your district* so that the interests of medical education and practice be not jeopardized through faulty legislation.

* * *

We trust our county society officers appreciate that the *state society officers and councilors* are *most anxious to be of service* in any phase of activity or service where county officers might think the advice and cooperation of state society colleagues could be of value.

To local officers who are in doubt as to what and how to do, the state officers particularly invite consultation if it is thought such counsel could be of value in the solution of local problems.

* * *

In Conclusion:

The year 1928. It is the year ahead of us. We will jointly write its history insofar as organized medicine in the states of California, Nevada and Utah is concerned. It is our hope that every county and state officer will measure up to his fullest obligations of service. If they do, the year will be a wonderful year for the California, Utah and Nevada Medical Associations, and for the medical profession and lay citizens of those states.

EXPLOITATION OF PROFESSION

Adverse comment in state journals has been rife concerning the recent scheme of a cigarette firm to foist upon the public the unthinking endorsement of a few physicians throughout the country as the studied and scientific research results of the medical profession.

It is regrettable that any physicians should have thoughtlessly lent their support to this advertising scheme. The profession that has studiously worked to protect the people from fraudulent claims of drug advertisers should be more alert and discerning.

In the Readers' Forum is a letter by Dr. Gayle Moseley calling attention to a new scheme and warning that in time "doctors will be flooded with requests for approval of every kind of food product." Under Current Comment is an excerpt from the *New York Journal of Medicine* that is much to the point.

With all the criticism that has been roused against unscientific endorsement and all the publicity that has been given the careless signature of a circular letter by some thousands of the doctors of our nation, it is hoped that never again will a single signature appear until the signer has incontrovertible proof that the claims he is endorsing are findings made after actual scientific investigation.

MEDICAL SOCIETY ELECTION PROCEDURES—AWKWARD AND OTHERWISE

One of our larger county medical societies has just gone through a somewhat unique and, what to many of its members was, somewhat of a surprising and confusing experience.

The lesson to be learned from what happened is that all parts of medical society constitutions and

by-laws should be carefully weighed and fully understood as to the significance of the wording and phraseology used before being adopted.

* * *

What happened in this particular instance was this:

The board of councilors by some revised by-laws, acting as a nominating committee, was permitted to make but one nomination for each office to be filled.

Following the announcement of the council nominations, additional nominations could be made from the floor by any member at the first December meeting.

For several years this by-law has been in force, but as no such additional nominations were made from the floor, the by-law in question was never put to the test of use.

* * *

In this last December, however, additional nominations were made and the names of the additional nominees were placed on the printed ballots.

Then followed the voting, which according to the new by-law was designated as a "primary" vote. With only two candidates for several offices, it seemed reasonable to assume that the nominee receiving the largest vote would have the majority and would therefore be declared elected.

Not so, however, for the phraseology was so involved that it was construed that it would again be necessary to vote for the same two candidates for certain offices.

Had the issues and feelings been less wrought up than in this campaign, perhaps no harm might have resulted. In this case, however, feeling seemed to run high, and the total vote instead of being the usual three or four hundred ballots out of a possible more than fifteen hundred or so, ran beyond twelve hundred.

This large vote was cast in both the primary and final ballots, with all the turmoil in evidence that would be incident to such an unusual vote.

* * *

These thoughts are not penned to in smallest measure criticize the unusual interest taken in this particular election, for if we lived up to our full responsibilities in organized medicine we would have such a full response in suffrage function at each annual election of officers. That we fail to vote so many times in civic and professional responsibilities of this nature, is a reflection on all of us who plead guilty to such failure.

* * *

The particular thoughts in the election being discussed to which we are tempted to call attention are the following:

In the old by-laws which were discarded, the council, acting as a nominating committee, could nominate not only one, but as many nominees as it saw fit for any one office.

In addition, any group of twenty members of the Association, by signing a nomination petition, could nominate as many more members as they might wish.

The balloting which then took place decided who was elected to office, and the election incident was closed, with a minimum of misunderstanding or controversy.

* * *

The new by-law refinement of a "primary" and then a "final" balloting, with electioneering manifest in the interval, in a profession which is so individualistic as our own, is not apt to make for good feeling or harmony or to promote the best interests of organized medicine.

Whatever does not make for a stronger, makes for a weaker organized profession. Our state association is made up of county units, which are the links of the chain which we call the state association. If one of the large and strong links of that chain is strained it carries that stress to marked degree not only in its own link, but also to a certain measure throughout the entire chain.

In this great state association of which we are members we are interested in making each link of the chain stronger, not weaker.

If through inadvertence some of the county units may have adopted procedures not conducive to the development of the fullest union, then it behooves such to consider a possible change of procedure.

* * *

The memories of older members of the state association go back to meetings and elections in the early days of our organization when issues became so tense that differences of opinions flamed at times into feelings of opposition that laid the foundations for misunderstandings which existed for years. No good can result to the interests of organized medicine when partisanship leads to such results.

* * *

In our own group of the healing art we are confronted with a sufficiently large number of important problems still to be solved, to utilize the energy of every one of us, without dissipating any of it in misunderstandings of one another.

Of course, we want interest and healthy rivalry in our annual elections of officers, for such interest sponsors developmental progress.

We would, however, eliminate methods of procedure which through cumbersome provisions prolong healthy interest to the point where heated rivalry is engendered.

Organized medicine to do its work must rely on a united profession. We want our issues, but once they are decided we should not dangle them before ourselves for a redecision.

From our conversations with members of the county unit which has gone through the experience which has been here cited, we believe that many colleagues are in general sympathy with the views here presented. The county society which has just gone through this new election experience will no doubt give its balloting procedures further consideration. Mention is here made of the matter because we profit through our experiences.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Urology

Renal Circulation—The Circulation of the kidney is known to be peculiar and, in comparison to the other glands and structures of the body, unique. The renal arterial system is, to all practical purposes, an end system, there being no anastomosis of the arterial branches. All the blood that enters the renal artery passes through glomeruli with relatively insignificant exceptions. Occasionally a branch is passed directly to the exterior, becoming a capsular branch without having directly supplied a glomerulus, and very occasionally there may be a small branch directly breaking up into capillaries about the tubules without any intervening glomerulus. But these exceptions are so rare as to have no significance with respect to function. This arrangement, therefore, provides a double capillary system; the primary being in the glomerulus itself, and the secondary being that formed by the breaking up of the efferent vessel from the glomerulus to supply different portions of the tubules. The blood from the secondary capillary system is collected in small venous radicles which in general follow the course of the larger arteries back to the renal vein. Although the anastomosis has never been definitely demonstrated, it is presumed that these venous radicles freely anastomose. It is possible to inject one branch of the renal artery and have a back flow through the other branch, provided the renal vein is ligated, and this would only be possible in such an end arterial system with an anastomosis in this secondary bed of capillaries. Experimentally it has never been possible, however, to reverse the circulation by way of the renal vein. Such a reversal would necessitate a back flow from the secondary system of capillaries through the efferent vessel to the primary system of capillaries in the glomerulus and then on out through the afferent vessel of the glomerulus to the progressively enlarging end arteries of the renal artery. Attempts to force a fluid or injection mass by way of the renal vein in reverse direction results in rupture at some part of the venous system. It may be into the cortex and on to the surface by parenchymal extravasation or by one of the larger venous radicles of the capsule itself or occasionally into the pelvis, but this extravasation with forcible injection by way of the renal vein does not follow the course that a back flow follows by forcible injection of the ureter. This latter designated pyelovenous back flow passes from the smaller angles of the minor calyces apparently directly into the venules at this situation and is unaccompanied with parenchymal extravasation. Just as complete injection of the venous system is possible by way of the ureter as by way of the renal vein itself because of the ease of this pyelovenous back flow.

The above understanding of the renal circulation is considerably undermined by an animal experiment recently reported in the German literature. Ludwig Paunz (Die Inversion des Nierenkreislaufes; Zeitschr. f. d. ges. exp. Med. Bd. 52, H. ¾, S. 548-549, 1926), undertook an experimental study with the purpose of reversing the circulation in the kidney with the hope of its practical application in glomerular nephritis, on the view that such a reversal would give direct and better blood supply to the tubules. Surprisingly enough, he reports a successful experiment in one dog in which he divided both renal artery and vein and then reanastomosed the proximal end of the artery to the distal end of the vein, and the distal end of the artery to the proximal end of the vein, at the same time carefully ligating all perirenal and accessory blood vessels so as to obviate short circuiting of the reversed blood stream to the surface. According to the results of injection methods such a procedure would seem absolutely impossible, as there is no way for blood to get back to the renal artery except by way of the glomeruli, and it hardly seems possible for the normal pressure of the renal artery to accomplish what cannot be accomplished artificially with a syringe or gravity method. Yet this experimenter reports that the circulation was apparently reversed and that a few weeks later the opposite ureter was completely ligated and that normal renal function existed, proving that the kidney with reverse circulation was able to hyperfunction in spite of this reversal of its blood supply. One cannot but wonder whether this particular animal used for the experiment did not possibly have a double ureter. Unfortunately the report was published two weeks after the experiment and before confirmation of results by autopsy findings. Reconsideration of the fact, however, that a back flow by one branch of the renal artery is possible, which would have to occur by reason of the free anastomosis of the secondary capillary bed, leads us to the definite possibility that a similar back flow would be possible if the fluid reached this secondary capillary bed by way of the renal vein instead of by one branch of the artery, and it is therefore possible that injection methods have not met the necessary conditions to produce this reversal. The proposition presents many points of interest, and is worthy of further investigation.

FRANK HINMAN,
San Francisco.

Metabolism

Arteriosclerosis and Diabetes—In a fascinating study Joslin[1] deals with the important problem of arteriosclerosis in the diabetic. Years ago the Janeways of New York wrote on this subject. The diabetic patient lives and dies in the so-called arteriosclerotic zone. To demonstrate this fact several tabulations are presented which show the average age of men and women at the onset of diabetes, and roughly this is found to be at about 50 years. In 1925, in Massachusetts, 80 per cent of the patients with diabetes were above the age of 50 at death. In the present epoch of therapy, *i. e.,* the Banting epoch, with insulin, the number of diabetics in the arteriosclerotic zone is rising so that the ten-year cases have increased. Today, consequently, the diabetic, like the thin man, runs the danger of growing old. Likewise coma has dropped to a third its former incidence as a cause of death, whereas arteriosclerosis has risen threefold in importance.

The criteria for the incidence of arteriosclerosis in diabetes are obtained chiefly through three sources, namely, from autopsies, from data on death certificates, and from the findings of clinical examination. Data from this last source are more accurate and extensive in recent years, due to the custom of more thorough study and the improved methods of examining peripheral arteries. Roentgen examination of the arteries of the extremities, the ophthalmoscopic study of the retinal vessels, and certain clinical evidence of vascular changes in the brain, heart, and kidneys, are now utilized in the medical investigation.

A discussion of certain likely factors in the etiology of arteriosclerosis as encountered in diabetes follows. This is centered around the food components used in the diabetic diet. Protein is acknowledged to favor rather than prevent the onset of arteriosclerosis. In the United States, Newberg and Marsh, and in Sweden, Petren, have advocated the low protein and high fat diet. It is agreed that excessive carbohydrate tends to obesity, otherwise starch is the ideal food to give to the arteriosclerotics and particularly those who have kidney disease. On the other hand, in the diabetic, carbohydrate produces hyperglycemia, and this in turn probably incites arteriosclerosis. Allen is quoted to the effect that arteriosclerosis is demonstrable in every case past middle life in which glycosuria has been present ten years or more. The presence of acidosis over a prolonged period is likewise adduced as a contributory factor in the production of arteriosclerosis, though positive proof of this point is lacking. In Joslin's opinion fat is the chief cause of the development of premature arteriosclerosis in the diabetic, if we except, of course, the factor of advancing age. The blood fat of the diabetic tends to be above normal and is never reported in a series of cases as below normal. The per cent of blood fat rises with the severity of the disease and varies particularly with the extent of the acidosis. Obesity and its termination in arteriosclerosis is now well known, thanks to the emphasis that Joslin has made of this point in numerous former papers. Until comparatively recently fat was welcomed in the diabetic diet because it allowed the thin diabetic more food. Except in the milder types of the disease, fat leads to the accumulation of incompletely oxidized ketone radicals in the blood, and ultimately to death in coma. However, what we are more interested in today, is the remote action of the various food components and especially their relation to vascular changes of the sclerotic type, since this is the complication which is now destroying the diabetic. Cholesterol is an important substance always associated with blood fat and is also generally increased in the diabetic blood.

Joslin then reviews some of the recent theories of the pathogenesis of arteriosclerosis. He points out the fact that clinically arteriosclerosis in diabetes attacks the arteries of the heart and extremities in preference to the cerebral vessels. In the future we must seek evidence to determine whether in the diabetic more arteriosclerosis is present than in the normal for the age and, further, whether cholesterol is present. In other words, is a different type of arteriosclerosis present in diabetes than that commonly observed in the non-diabetic? We shall also want to know whether cholesterol deposition in the arteries can be influenced by medical and dietary means. Virchow's imbibition theory of arteriosclerosis, so named and modified recently by Aschoff,[2] may or may not be the correct theory of the pathogenesis, but it certainly fits in with the conditions found in diabetes.

The prevention of arteriosclerosis in the diabetic is a vitally important problem, and with our present knowledge something can be accomplished in a protective way. Fat must still be an important component of the diabetic diet, but the question arises what amount is it safe to allow in order to prevent the development of arteriosclerosis. First of all, we are quite sure that the quantity must be kept so low that body weight eventually will be kept normal or a trifle below normal. We know that fat metabolism goes on abnormally, so far as cholesterol is concerned, in both the diabetic and the obese. It stands to reason, therefore, that the closer we hold the weight to the lower limits of normal the safer it will be for the patient. Further, the diabetic most prone to develop arteriosclerosis at an unusually early age has been the severe diabetic kept alive hitherto upon a low carbohydrate and high fat diet. For the present, therefore, Joslin aims during the first few years of the diabetic regimen to raise the tolerance with the help of insulin, so that eventually the patient can take 100 grams of carbohydrate or even more with a relatively small amount of insulin. Thus insulin helps in allowing the diabetic to utilize 100 grams of carbohydrate daily and consequently the total fat of the diet can be kept relatively low. This insures a lower level of fat in the blood

1. Joslin, Elliott P.: Arteriosclerosis and Diabetes, Ann. of Clinical Medicine, Vol. v, No. 12, p. 1061, June, 1927.

2. Aschoff, Ludwig: Lectures on Pathology. Paul B. Hoeber, Inc., N. Y., 1924. See Chapter VI, Arteriosclerosis.

and tissues, and thus retards the development of arteriosclerosis. As yet the exclusion of foods rich in cholesterol from the diet has not been advocated, since there are so many such foods and since cholesterol is too valuable a compound of the body cells to be treated in such a cavalier fashion.

The final section of this thoughtful paper discusses the treatment of diabetes and is written in the most characteristic, epigrammatic style for which Joslin is adept. The opening sentences are so forcible and impressive that I cannot do better than to quote them verbatim. "If a diabetic has known enough to live ten years, be sure you know enough to make him live another ten years before you tamper with his diet. The arteries of the young diabetic are elastic and his diabetes is so pliable and amenable to all types of treatment that you can toss him about in your diabetic salon like a rubber doll. Not so the old diabetic. His arteries are thickened and sometimes hard, and his status must be changed as delicately as you would move a choice piece of bric-a-brac. If you wish to keep a few examples of this arteriosclerotic, diabetic bric-a-brac for your son to treat, be cautious. Be guided by my experience in the early part of this century, when with youthful enthusiasm I suddenly reduced the blood sugar of a cherished Commonwealth Avenue diabetic patient, Case No. 11, who at infrequent intervals had mild attacks of angina pectoris. In the early hours of the morning I was called to her untimely death bed. And that other diabetic in 1922, Case No. 705, should be mentioned who also was found dead a few days after I reduced his blood sugar with diet and insulin." Joslin then goes on to state that the rapid reduction of the blood sugar level in elderly diabetics may be disastrous through its effect on a diseased myocardium that is already poorly nourished by sclerotic coronary arteries. In patients with a high blood pressure and a lowering of the sugar tolerance, a hyperglycemia may exist as a compensatory process to supply the requirements of a malnourished heart. Hyperglycemia must not, therefore, be regarded from the diabetic standpoint alone, but from that of the needs of the entire body. In the elderly patient surely avoid any tendency toward hypoglycemia.

Ernest S. du Bray,
San Francisco.

Gastro-Intestinal Disorders

Gastro-Intestinal X-Ray—I find that in commercial x-ray laboratories and in hospital x-ray departments as well, there is a tendency for the general practitioner to refer gastro-intestinal patients with a request for "x-ray examination of the stomach only."

This failure to make complete and thorough examination of the whole tract is a serious and vital mistake. It results in loss of prestige to the physician and disappointment to the patient. The chances of error are high enough without increasing them in this manner.

The reasons for this error arise in a desire to please the patient who wishes to save expense. A patient cannot be expected to understand the reason for "examining any other spot than where the pain is." Whether it is true or not, let us credit the doctor with understanding the reasons. It is easier to feel that he understands, but allows himself to be persuaded to do what the patient wishes because some other clinician or laboratory has done the same thing.

The stomach is the seat of pain referred from many areas in the abdomen. The vegetative nervous system is capable of referring painful sensations either up or down in the spine, and that the stomach or epigastrium is the seat of pain or distress, is no reason that the pathological etiology is located there. Gastric diseases are rare; intestinal diseases are very common, relatively speaking, and when there are gastro-intestinal symptoms we need an intelligent search for the reason, not a simple looking to the spot where the reflex has placed the pain or symptom. This is, of course, true of the entire examination, but we are now speaking of x-ray examination particularly.

The intestines are not the only organ that refer symptoms to the stomach; others are the rectum, the appendix, and the gall bladder.

X-ray apparatus has been developed to a point of great perfection and facility of operation. Our commercial concerns are out to sell this apparatus, and men have installed x-ray equipment who, after having been taught the technical side of the work, are not in any way qualified to interpret the findings. The patient cannot be expected to understand and discriminate in this matter intelligently. I hope for the day when there will be some regulation from "within the party." We need organization in general medicine similar to that in general surgery. I am sure the general practitioner, and laboratory worker as well, would do well to examine the patient completely and to the best of his ability or not at all. If the patient cannot pay, it would be economy in the long run to adjust the price to the patient, or do the work gratuitously.

R. Manning Clarke,
Los Angeles.

Orthopedics

Fusion Operations on the Spinal Column—The joints of the spinal column are major weight-bearing joints, and when so severely distorted by injury or disease that useful motion is no longer to be expected, should be arthrodesed by callus or by fusion operation.

It is two decades since Albee, Hibbs and others pioneered the field of operation, but only within the last ten years has spinal fusion been widely accepted. Such operations are today generally recognized as a most valuable means of promoting and hastening recovery both in tuberculosis and after severe fractures of the spine.

The insertion of a single tibial graft in a cleft in the split spinous processes (Albee's operation) has the advantage of simplicity and preserves the

mechanical leverage of the spinous processes. It does not so well insure a strong and permanent fusion as the Hibb's operation, which directly obliterates the zygapophyseal articulations, lays down two lateral bridges of laminal shavings and a central bridge formed of the broken-down spinous processes. This operation is a rather tedious procedure and destroys the mechanical leverage of the spinous processes.

For many years Hunkin has used tibial grafts placed upon the denuded laminae against the bases of the spinous processes on either side. This operation often produces good results, but provides only an uncertain contact of the surfaces of the grafts with the irregular surfaces of the laminae and spinous processes, and does not directly block the zygapophyseal articulations.

Magnusen bolts the spinous processes together with ivory screws and plates. This foreign body fixation, although it undoubtedly secures immediate temporary immobilization, probably does not often result in strong or permanent fusion. Metal plates used in a similar way by some European surgeons are even less commendable.

Grantham (*Journal of Bone and Joint Surgery,* October, 1927), describes a method of fusion by insertion of a tibial graft in a tunnel, made at the base of the spinous processes with a special grooved osteotome. This would appear to be a rather dangerous resort to "blind" surgery and of limited application.

In California and Western Medicine, May, 1924, the writer described a method of fusion by double tibial grafts sawed to shape and placed deeply within the cancellous bone of the split laminae in such way as directly to block the zygapophyseal articulations. At either end of the fused area portions of the spinous processes are left *in situ,* thus preserving the mechanical leverage of the spines. This method requires rather tedious technique, but insures a strong and early fusion.

Operation should be limited to the fusion of the damaged segment or segments to each other and to one unimpaired segment above and below. The extension of the fusion to include further undamaged joints is a needless sacrifice of function and tends only to weaken the center of the fused area because of the increased leverage upon it exerted by the longer rigid elements above and below.

Rest in recumbency and mechanical support during early ambulatory convalescence are just as essential after fusion operation as in the so-called conservative treatment without operation. Fusion only hastens and improves the degree of recovery when it is used in conjunction with and not to supplant other rational measures of treatment.

E. W. Cleary,
San Francisco.

Ophthalmology

Iritis—There are two diseases that might be confused with an acute iritis, namely, acute conjunctivitis and acute inflammatory glaucoma, and these two diseases must be eliminated before treatment of iritis can be given.

In an acute conjunctivitis there is no actual pain, except a photophobia and a feeling as if sand was in the eye. The pupil reacts to light. The lids stick together, especially in the mornings; and secretion can be seen in the conjunctival sac. If in doubt, it will do no harm to use one drop of a 2 per cent homatropin to see if the pupil dilates evenly.

An acute inflammatory glaucoma generally affects a person of middle age or past. It comes on suddenly with a severe pain in the eye, and is generally severe enough to produce vomiting. The cornea rapidly becomes hazy and insensitive. The pupil is dilated and immovable. The anterior chamber is shallow. The vision is rapidly cut down to perception of shadows.

Iritis is an acute inflammation of the iris and ciliary body. There is increased photophobia and lacrimation, but no pus. The pupil is small, the cornea clear, and the anterior chamber is of normal depth. There is a circumcorneal injection fading toward the fornix. The pain radiates to the temple of the affected side and is worse at night. If homatropin is used the pupil dilates irregularly, due to adhesions to the capsule of the lens.

Iritis is a local manifestation of a constitutional condition. There is a focus of infection somewhere that has to be located, and this focus can be found in practically every case if search is thorough enough. Brown and Irons [1] in their series of two hundred cases found syphilis alone caused twelve, gonococcal infections eight, tuberculosis eight, dental infections twelve, tonsillar infections twenty-six, sinus infections one, genito-urinary without venereal infection six, and other infections three.

After finding and eliminating the cause, active treatment to the eye must be instituted and kept up until all danger of adherence of the iris to the anterior capsule of the lens has passed. Atropin in a 1 or 2 per cent solution instilled into the conjunctival sac three times a day will usually break up recent adhesions and keep the iris free. In the event that these adhesions will not tear loose, then with the patient in a reclining position, a 4 per cent cocain solution is instilled three or four times; a speculum is introduced; the bulbar conjunctiva is grasped with a small fixation forceps and a subconjunctival injection of three minims of 4 per cent cocain combined with 7 minims of adrenalin is done. This will usually free the adhesions, or at least a part of them. A few days later this may be repeated until all adhesions are freed. After the injection is made the patient should be kept in a reclining position and warned that his heart

1. Brown and Irons: The Etiology of Iritis. Transactions of Section on Ophthalmology, A. M. A., 1923.

may beat rapidly, but that he need not be alarmed.

In those chronic cases of iritis with an increased tension from complete adhesions, or in those cases of cataract where there is a complete adhesion, an iridectomy should be done, then an iris speculum introduced and all adhesions freed, being careful not to injure the lens.

Anesthesia for such an operation is best obtained by morphin and scopolamin, combined with local cocain and by blocking the ciliary ganglion by a deep orbital injection of 4 cc. of 2 per cent novocain.

William A. Boyce,
Los Angeles.

Dermatology and Syphilology

Bromid Eruptions and Their Treatment—Skin lesions due to bromids result from idiosyncrasy for the drug or from accumulation of bromin in the system. The latter may be due to numerous underlying causes. These eruptions vary from stubborn acne, with ugly indolent pustules, to large abscesses, ulcers or granulating areas resembling blastomycosis. Also various nervous symptoms may develop. Manifestations of bromism *may persist a long time after use of the drug has been discontinued,* and bromin will continue appearing in the body fluids.

Udo J. Wile and his co-workers in the department of dermatology and syphilology of the University of Michigan have developed a simple and effective method whereby the bromin producing these symptoms is quickly eliminated, with rapid subsidence of the skin lesions. In the July, 1927, number of the *Journal of the American Medical Association* (Vol. 89, No. 5, pp. 340-41), Wile describes his method, and gives references to his previous investigations of this subject. A new and simple modification of the test for bromin in body fluids as devised by G. H. Belot, is also described.

It was found that "ingested bromid was with difficulty passed through the renal epithelium. Salts of bromin tend in consequence to be stored up in the tissues of the body. Bromid displaces the chlorid ion in the body, the ingestion of the former leading to rapid elimination of the latter with consequent chlorid deficiency. In cases of bromid intoxication the intravenous injection of physiologic sodium chlorid solution leads to the liberation of the bromid from the tissues, occasionally accompanied by a sharp renal irritation. The replacement of bromid in the tissue by chlorid immediately favorably influences the symptoms of bromism, notably those in the nervous system and in the skin, causing their rapid involution."

For the initial dose, Wile injects intravenously 100 to 150 cc. of physiological salt solution. If well tolerated it is increased to 300 to 400 cc. given twice weekly. Naturally patients showing renal irritation are not good subjects for this treatment.

I have been able to obtain similar good results in several cases. Recently Dr. Stuart Way and I observed the subsidence of a bromin acne in four days after the administration of sodium thiosulphate.

Harold Cole and Wile both find that x-ray treatment of the lesions while the patient is receiving sodium chlorid causes the lesions to disappear much more rapidly than without radiation. Several clinicians have found that sodium chlorid given by mouth (in enteric-coated tablets) acts very well, but of course the intravenous administration is preferable.

Harry E. Alderson,
San Francisco.

Dermatology and Syphilology

The Grenz Ray—The recent announcement of the development of a new agent, the Grenz or infra-roentgen ray, in the treatment of disease has stimulated the interest not only of dermatologists, but of physicians in the field of general medicine. Bucky[1] has studied the effects of these rays experimentally and clinically with the following results:

The rays occupy a position between the ultra-violet and roentgen rays, and consist of electromagnetic oscillations of wave lengths of about two Angström units. They produce entirely new biologic effects, differing both from ultra-violet and roentgen rays. Bucky believes that the Grenz rays will replace roentgen rays in dermatology, at least so far as superficial therapy is concerned. The rays are entirely harmless because with the proper technique they are absorbed by the upper layers of the skin, saving the germinative layers. Promising results from this form of therapy have been observed in disturbance of the autonomic and endocrine systems. The acute symptoms of ulcer of the stomach and intestines have been quickly relieved following irradiation of skin areas of the trunk. Bucky has secured very encouraging results in cases of polycythemia, peritoneal tuberculosis, diabetes, angina pectoris, bronchial asthma and chronic irritative cough in children.

In the dermatologic field such diseases as pruritus, eczema, acne rosacea, lichen planus, pruritus ani, ringworm of the scalp, paronychia, warts, mycosis fungoides, Kaposi's sarcoma, epithelioma, carbuncles, and furuncles have been successfully treated.

Bucky mentions the following practical advantages of the method: probability of absolute safety, possibility of replacing changed skin with normal, markedly shortened healing period, remarkable cosmetic results, lack of danger of repeated irradiation and new indications, such as the influencing of internal organs by the skin.

Considering the wide range of usefulness of roentgen rays and ultra-violet rays it may not be too much to hope that further clinical data will substantiate these findings.

Samuel Ayres, Jr.,
Los Angeles.

1. Bucky, Gustav: Actual Superficial Therapy by "Grenz" (Infra-Roentgen) Rays, Arch. Derm. and Syphil., 15:672, June, 1927.

Proctology

Rectal Examinations—Rectal examinations are singularly neglected. Not only in general cases, but also where the symptomatology points definitely toward the colon and rectum, practitioners are seemingly reluctant to make a thorough examination of the anus and interior of the rectum.

Cases of most severe, chronic diarrhea have been referred from one specialist to another and all manner of chemical tests and roentgenologic examinations done. Finally after months, or even years, rectal examination may reveal an obstructive neoplasm, malignant or benign. Such lesions are so often not only demonstrable by proctoscopic examination, but their existence can often be discovered by the finger.

Lotheissen[1] points out that many rectal diseases can be diagnosed by inspection alone; usually a digital examination is advisable. Thus will the danger of treating hemorrhoids and neglecting a low rectal carcinoma be avoided. If nothing is discoverable by these methods the possibility of rectal disease is small.

There are, however, certain indications for proctoscopic examination. The source of blood and pus should be sought through the proctoscope or sigmoidoscope. Cases of colitis or dysentery resistant to treatment should be examined with and often treated through the proctosigmoidoscope. The proctoscope is extremely valuable in determining the exact nature of trouble found present by the simpler methods.

After all is said, however, proctoscopy ranks low in comparison to external and digital examination in the detection of rectal disease. The latter methods are available to all, and should be used more often than is the case.

Embarrassment for the physician and disaster for the patient would often be prevented if the lower end of the alimentary canal received just a little of the consideration so lavishly bestowed on the buccal cavity.

Gordon F. Helsley,
San Francisco.

Syphilology

Syphilitic Nephrosis—Syphilitic nephrosis occurs in one out of every twelve cases of early syphilis. Adoption of the usual treatment for early syphilis will usually cause irreparable, permanent damage to the kidneys; even with the best of care there is apt to be a polyuria for life. A few weeks after the infection the patient presents a bloated appearance, great weakness and anorexia. Edema soon occurs, at first in the eyelids and fingers, and later is quite generalized. The patient complains of shortness of breath and headache. The urine output is diminished in inverse ratio to the onset of edema. The urine has a flocculent sediment and a foul odor. Output of water and sodium chlorid is diminished, although there is no nitrogen retention. Urinary albumin may reach 3 per cent. Microscopically one finds leukocytes and cylindroids, and double-refracting lipoid bodies (visible under a polariscope). The blood pressure is never raised and there is no cardiac hypertrophy.

The patient should be put to bed at once and given a bland, salt-poor diet; meat should be withheld, but there is no need to limit milk and eggs. The vegetable diuretics (juniper) may be used, but the theophyllin or theobromin group of diuretics are injurious. Sodium iodid, 0.5-1.0 gm. daily, is administered intravenously (K-ion is toxic for the kidneys). After two weeks of iodid, H. Rubritos recommends a cautious course of mercury rubs. Schlessinger says mercury is less indicated than bismuth or arsphenamin. Bismuth probably is the safest, in weekly injections of 0.12 gm. of the salicylate per 150 pounds body weight, the iodids being continued. If the albuminuria increases, or if the urinary output is further diminished, specific treatment must be interrupted for a few days. Only in edema-free stages is neoarsphenamin to be used, and then only in .15 gm. doses at the start. Careful observation of the patient during treatment is necessary. Iron and liver may be given for the concurrent anemia. After subsidence of all signs of nephrosis the patient may be put on a more or less reduced treatment schedule, but he will always require frequent urinalysis during treatment.

M. W. Hollingsworth,
Santa Ana.

1. Lotheissen, G.: Wiener Klin. Wochenschrift. 1927, No. 12.

Ophthalmology

Progressive Myopia—Among the numerous hypotheses advanced concerning the development of myopia, none have been of much assistance. The problem is of such importance that any new ideas or methods of treatment of progressive near-sightedness should have thorough study to prove or substantiate their value.

The most recent and, I believe, the most logical hypothesis regarding progressive myopia is that it is a deficiency disease.

Meyer Weiner believes this deficiency to be an epinephrin insufficiency. In any event the installation of epinephrin in the eyes of his patients has shown enough amelioration in their condition to warrant others to keep this idea in mind and try it out sufficiently to come to some definite conclusion.

J. D. Wood also classifies the condition as a deficiency disease, but has found a lowered calcium content in the blood of all patients in whom this determination was made, so that he thinks the condition may be a calcium deficiency during the period of growth.

These two hypotheses are of a concrete nature and should awaken a new interest in the myopia problem.

Wilber F. Swett,
San Francisco.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

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WILLIAM H. KIGER.....President-Elect
T. HENSHAW KELLY.....Vice-President
EMMA W. POPE.....Secretary-Editor

OFFICIAL NOTICES

Membership Record—1927

County	Delinquents	Members
Alameda	8	383
Butte	3	20
Contra Costa	0	33
Fresno	7	103
Glenn	2	7
Humboldt	0	33
Imperial	0	19
Kern	0	47
Lassen-Plumas	1	13
Los Angeles	51	1627
Marin	0	20
Mendocino	0	17
Merced	0	18
Monterey	1	26
Napa	0	24
Orange	2	83
Placer	1	32
Riverside	2	43
Sacramento	3	129
San Benito	0	8
San Bernardino	4	96
San Diego	5	203
San Francisco	8	850
San Joaquin	0	76
San Luis Obispo	2	12
San Mateo	4	26
Santa Barbara	1	68
Santa Clara	2	124
Santa Cruz	2	31
Shasta	0	10
Siskiyou	2	16
Solano	1	16
Sonoma	2	39
Stanislaus	1	42
Tehama	0	10
Tulare	1	43
Tuolumne	0	6
Ventura	1	19
Yolo	1	27
Yuba-Sutter	0	11
Total	118	4410

The above table is a graphic picture of the constant efficient work of our forty county secretaries. Not for many years has the California society recorded so few unpaid subscriptions. Fourteen counties have an honor record. San Joaquin with her seventy-six members should head that list. Nine counties report but one unpaid member; eight, but two; and of the remaining nine only four are in counties with a membership of less than one hundred. Viewed from the percentage of total membership, the county with the largest number of unpaid subscriptions has a smaller rate than many of the smaller societies. From any standpoint, the record is one of which the California Medical Association has reason to be proud, and to extend grateful thanks to her most efficient corps of component county secretaries.

* * *

Clinical Prizes—Rules for the Submission of Papers. The Committee of Clinical Prize Awards desires to call the attention of the membership to the following rules governing the submission of papers, for the benefit of those who desire to compete for the 1928 prizes:

1. Any member of the California Medical Association is eligible to compete for the prizes. Any question arising as to the eligibility of a candidate or the admissibility of his essay will be settled by the decision of the Council.
2. Manuscripts must be typewritten on one side of the paper; they must be double spaced; and they must not be folded or rolled. Illustrations or charts must be marked with the title of the paper to which they belong.
3. Essays must not contain more than four thousand words. In judging a paper the committee will take into account the basic importance of the work done and its novelty; the thoroughness with which the research has been carried out; the clearness with which it has been written up; and the neatness of the manuscripts and illustrations.
4. Papers should be sent, preferably by registered mail, to Dr. Emma Pope, secretary of the California Medical Association, 1016 Balboa Building, San Francisco. They should be identified by a nom de plume or motto only. A separate envelope should be sent to Doctor Pope containing the author's name and his nom de plume or motto, so that after the award is made the name of the writer can be found. Any return addresses or distinguishing marks will be removed from the wrappers before the papers are turned over to the judges.
5. All papers must be in the hands of Doctor Pope before March 15, 1928, in order that the judges may finish their work in time for the meeting of the Association.
6. The judges reserve the right to withhold the award, in the event that no paper comes up to the standards of excellence they feel should be set.
7. If, in the judgment of the editors of California and Western Medicine, and the editorial councilors, the paper on laboratory research is too technical or otherwise unsuitable for inclusion in California and Western Medicine the prize winner will be allowed to publish it in some special journal and will be required to make an abstract for the readers in California.
8. Inquiries relative to the prize contest should be addressed to the chairman of the committee, George Dock, M. D., Chamber of Commerce Building, Pasadena, California.

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The annual meeting of the Alameda County Medical Association was held at the Ethel Moore Memorial Building on the evening of November 21, being called to order by Dr. George Rothganger, the president.

The first number on the scientific program was a paper by Dr. W. E. Mitchell on "The Ruptured Appendix." The author reviewed the history of drainage from its earliest uses giving a résumé of the results obtained in all cases of ruptured appendices treated at Merritt Hospital. The writer believes that drainage is of value only in instances in which it is

desirous to render certain areas extraperitoneal. He pointed out the impossibility of successfully draining the peritoneal cavity, citing interesting experiments to prove his point. The present drainage methods of treatment of the ruptured appendix were contrasted with the modern surgical methods of handling tuberculous peritonitis, a ruptured viscus or intestinal obstruction, emphasizing the fact that in a ruptured appendix, as in all of these conditions, the absorption of toxins from the upper intestinal tract is most harmful to the patient. He reviewed the work of certain English writers who invariably found foci of infection with *B. welchii* near the point of obstruction and who offered clinical and experimental data to show that this organism was responsible for the severe symptoms. The discussion of this very interesting paper was opened by Dr. Warren Allen, who agreed with the author that drainage in the average ruptured appendix did more harm than good. Dr. D. N. Richards spoke in behalf of drainage in a certain number of cases emphasizing the importance of jejunostomy in all intestinal obstructions. Dr. C. A. Dukes voiced his belief in draining abscess cavities whether they be in the peritoneum or elsewhere.

The second paper of the evening was presented by Dr. Edward von Adelung, on the subject "Some Non-Tuberculous Infections of the Lung." The doctor discussed the conditions which may readily be confused with advanced tuberculosis, in each instance differentiating the condition. The discussion on Dr. Von Adelung's paper was opened by Dr. George Evans of San Francisco who spoke on the differential diagnosis illustrating points made, with case histories.

The scientific program was followed by the annual reports of all standing committees and retiring officers. Our retiring president, Dr. George Rothganger, in his address urged the Association to plan at once to build a new home. Doctor Rothganger also urged the members of the medical profession on this side of the bay to do whatever was in their power to bring the medical college of the University of California to the campus of that university where it rightly belongs. The officers for the ensuing year were then presented.

There being no further business the meeting adjourned.

GERTRUDE MOORE, *Secretary.*

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CONTRA COSTA COUNTY

The annual banquet of the Contra Costa County Medical Society was held on November 12 at the Athens Club, Oakland. Following the banquet all enjoyed seats at the Fulton Theater. The December meeting of the society was held in Richmond at the offices of Doctors Abbott, Hely, and Hedges on December 10, 1927. It was a business meeting at which election of officers for the coming year was held.

The following were elected: L. St. John Hely of Richmond, president; W. A. Rowell of Crockett, vice-president; S. N. Weil of Selby, secretary-treasurer. Censors: H. L. Carpenter, three years; G. W. Sweetser, two years; D. C. Wise, one year. Delegate: J. M. McCullough. Alternate: L. St. John Hely.

S. N. WEIL, *Secretary.*

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LOS ANGELES COUNTY

Obstetrical Section—The Los Angeles County Obstetrical Society at its meeting on October 8 considered the problem of the unmarried mother. Miss Lavonne Stanton, secretary of the Children's Home Society, discussed the social service work, and detailed the methods used to establish contact with the mother, to establish the paternity of the child, if possible, in order to secure financial support or marriage, and generally to provide sympathetic care during the antenatal period. After delivery the home provides care for the baby for six months and, if desired, supervises the adoption proceedings. About three times as many calls for babies are received as can be filled. Careful analysis of the foster family and of the baby's antecedents are attempted in order to secure a background as satisfactory as that to which the baby is entitled. After placement, supervision is continued for a year. Dr. Peter O. Sundin detailed the medical care at the Florence Crittenten Home of which he is the medical director. The average age of the mother is under twenty and labors are uniformly easy. Only two Cesareans were done in the last twenty years. Mr. George Hooper, attorney for the Home Finding Society, explained the new adoption law, pointing out the changes which prevent placements by unauthorized agencies. He emphasized particularly the illegality of placement by the attending physician.

At the regular meeting of the Los Angeles County Medical Society on December 13, Dr. A. L. Hill presented a specimen of congenital cyst of the trachea, in an infant 4½ months old, that had unusual respiratory difficulty. The child survived one attack of pneumonia, but died in a second attack before direct bronchoscopy could be employed.

Dr. Fred Lindenberger reported a case of hemorrhagic fibromyoma complicated by exophthalmic goiter, in which all symptoms cleared up after deep x-ray. There was, however, an initial exacerbation of the thyroid disorder. Only two similar cases are on record.

Dr. E. J. Krahulik discussed anterior poliomyelitis as a complication of pregnancy. Provided abortion does not occur because of high temperature, one need not fear fetal paralysis, as the infection localizes in the central nervous system after traveling along the perineural lymph spaces and not by the blood stream. His case delivered a normal infant twenty-one days after the onset of her symptoms. The question of whether the baby shows antibodies will be investigated.

Dr. S. N. Pierce championed the Kielland forceps as a rotator, and detailed his results in 120 cases. He believes these forceps will replace all the other varieties, and quoted German authorities who are enthusiastic about their use.

WILLIAM BURTON THOMPSON,
Secretary Obstetrical Section.

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RIVERSIDE COUNTY

Our last society meeting was held on November 14. The program consisted of a paper by Dr. Gilbert R. Owen of Los Angeles, who spoke on "Certain Types of Headache and Focal Infections of Interest to General Practitioners." His lecture was illustrated by lantern slides and demonstrations on the cadaver.

Dr. Herney S. Faris of Riverside was elected to membership in the society.

Dr. H. R. Martin of Riverside is visiting clinics and medical centers of South America. He expects to be absent until the first of the year.

Dr. C. Van Zwalenburg has recently returned from a trip through the East, where he attended the College of Surgeons at Ann Arbor and made a study of hospital conditions throughout the East.

Dr. W. W. Roblee was recently in attendance at the Interstate Medical Clinics held in Kansas City.

THOMAS C. CARD, *Secretary.*

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SACRAMENTO COUNTY

The members of the local society met in the Gold Room of the Hotel Sacramento on the evening of November 19. There were thirty-nine in attendance. The minutes of the previous meeting were read and approved.

Several members had cases to report. Charles E. Schoff demonstrated an epithelioma of the back. The tumor grew in the midst of scar tissue which dated back to 1898. At that time an x-ray burn accounted for the original skin injury. More recently the constant use of a wire brush to allay itching of the area gave a superimposed skin injury. The epithelioma grew at this site. Schoff recommends the use of a hot iron to burn out the growth.

Frank P. Brendel showed a happy result of a Koch hip. Besides bony x-ray findings, which were diagnosed as tuberculosis by Cook, Zimmerman and Ruggles, there was a "cold" abscess. As a result of

detecting the trouble early the patient now has complete function regained.

Fred E. Gundrum reported a case of marked argyria in a woman of forty whose source of the silver was from argyrol packing in the nostrils. Bloomfield sectioned the skin.

Edward W. Beach described a massive hemorrhage of the kidney which completely encapsulated the kidney.

Frank B. Reardan described a group of symptoms which led to an immediate tentative diagnosis of typhoid fever. It proved to be influenza.

The paper of the evening was presented by Oscar F. Johnson. His subject was "Some Personal Observations in Human and Bovine Tuberculin Tests." His conclusions as to the value of the test, its specificity and the possibility of a decided aid in the prevention of clinical tuberculosis by the control and eradication of bovine tuberculosis, is based on the most careful testing and clinical follow-ups on 160 patients. His observations tally with many other opinions relative to the usually accepted idea before the age of two and after this; but he maintains that there is a definite specificity in the test for this "universal" organism. Whether it may be later proven that the various forms are merely changed ones from the bovine is a question for future consideration, but in reading the test does differentiate. Johnson commends the present excellent work now being accomplished by the national government in endeavoring to eradicate bovine tuberculosis. Gundrum, Reardan and Scatena discussed the paper.

After the second reading of the applications of W. J. Van Den Berg, James Travis Vance and Oliver H. Perry, all were unanimously elected to membership in the society.

Communications—A note of appreciation for our acknowledgment of sympathy was received from the family of Cornelia Krull. A new extension lecture program was received from the state and filed. A note from Thomas E. Gibson suggesting a state program paper was reported to the program committee. P. W. Day writes from Folsom that he is a member of the Marin County Medical Society; however, despite the sixty-day limitation, word has not been received from Marin that his transfer could be made. A note from Harvey W. Strader tells of his complete retirement from practice and, consequently, he desires to be placed in an affiliate classification. He tells of his many happy affiliations with the society in the past.

Probably the most sincere note of friendship ever received by the society was received from Robert A. Peers. Peers writes that he is enclosing a check to help along the convention fund. Though really a member of our society, Peers needs be, by reason of county borders, a member of Placer. This is the spirit that builds.

Hendricksen, through the secretary, offered a long file of "military surgeon."

Drysdale, chairman of the program committee, outlined some future programs.

Discussion was held as to our place of meeting. This will be considered by the board.

A buffet lunch concluded the meeting.

BERT S. THOMAS, *Secretary.*

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SAN BERNARDINO COUNTY

The meeting of the San Bernardino County Medical Society was held December 6 at the San Bernardino County Hospital at 8 p. m. Thirty-six members were present.

Minutes of the previous meeting read and approved.

The question of a representative on the County Hospital committee was considered and Mr. Earl Paul was nominated to the private hospital and Doctor Moseley to the County Medical Society. These nominations to be voted upon at the next meeting.

The following new members were passed: C. E. Counter, Loma Linda; Marcus D. White, Ontario; Wallace M. Chapman, Ontario.

The announcement of the fall meeting of the Southern California Medical Association was made. The question of rounding up eligible non-members was again brought up. The health activities that are to form part of the American Week were considered and the superintendent was instructed to communicate with the County Superintendent of Schools to consider this matter.

The Committee on Maternal Welfare was discharged, no action having been taken. The Welfare Committee was continued for one month, at which time Doctor Moseley was to report. The question of individual professional cards in the newspapers was considered by request. It was decided that while such action was permissible, it was inadvisable and should be discouraged.

A request for the purchase of a portable typewriter having been made, such action was authorized to the amount of $60.

Meeting adjourned at 1:30.

The following men have been admitted into the society: Drs. C. E. Counter, W. M. Chapman and M. D. White.

The new delegates to the state medical meeting are Doctors Moseley and Richards. Doctors Eytinge and Walter Pritchard are alternates.

This public health meeting is by request as it is felt that in the present flux of medical practice we should all be familiar with the changing conditions that surround the practice of medicine at the present time. A free discussion is especially to be looked for.

The following program was presented:

The Physician, Health Centers and Public Health—G. F. Telfer. Discussion was opened by Dr. C. J. Whitmer, and continued by Doctors Moseley and Abbott.

Acute Anterior Poliomyelitis—E. M. Burns. Discussion by Doctors Savage and Langdon.

The meeting adjourned at 10 p. m.

E. J. EYTINGE, *Secretary.*

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SAN DIEGO COUNTY

On November 15 the members of the Mercy Hospital staff enjoyed a spirited meeting discussing their experiences with narcotic habitues who had recently been working San Diego to their advantage.

Doctor Tanner reported an interesting case of a young woman who successfully went through a pregnancy with the left kidney practically gone and the right one very much enlarged. The case had been referred to him for surgery which he wisely advised against. The woman is still living.

Mr. L. E. Carlson, the head of the physiotherapy department of the hospital, gave an entertaining report of his recent visit to the clinics of Denmark, where he had studied closely their methods of physiotherapy. He found them using some form of physiotherapy on practically all cases in the hospitals, but found much less of the multiplicity of mechanical instrumental application of such treatment in physicians' offices than we find in this country.

He spoke in very high terms of the new municipal hospital in Copenhagen and its perfect equipment.

At the staff meeting of the Scripps Memorial Hospital, La Jolla, December 6, 1927, Dr. Thomas O. Burger and Dr. Hall G. Holder discussed infections and carbuncles of the face and their treatment.

Doctor Lazelle reported an interesting case of osteitis of the knee joint. These discussions were followed by a business meeting outlining plans for the growth and further development of the hospital.

The San Diego Academy of Medicine is just announcing its third annual course of medical lectures beginning January 23, 1928. The speaker will be Dr. Allen Krause of Johns Hopkins University, an international authority on tuberculosis. Every phase of this important subject will be discussed during the week.

On Saturday evening, January 7, the medical society will be the guests at dinner of Colonel Milton A. McRae and Mr. J. C. Harper, directors of the Scripps Metabolic Clinic. After dinner the guests will be addressed by Dr. Cyrus C. Sturgis, director of the

Thomas Henry Simpson Institute for Medical Research at Ann Arbor, Michigan, who will discuss the dietetic treatment of pernicious anemia with especial reference to the chemical principles involved.

ROBERT POLLOCK.

SAN FRANCISCO COUNTY

The San Francisco County Medical Society held a dinner dance in its new home on December 8, 1927, which was attended by about 250 people, members of the society and their wives or husbands. There was no scientific program. Music, dancing, and a quartet of Italian singers provided the amusement of the evening, which seemed to be an enjoyable one to all concerned.

On the evening of December 20, 1927, the society was fortunate in having as its guest speaker Professor Franz Groedel of Bad-Nauheim who spoke on "The Diagnosis of Syphilitic Diseases of the Visceral Organs, Especially by the Help of X-Ray Pictures."

At the meeting on December 13, 1927, the following officers were elected for the year 1928: Alexander S. Keenan, president; William E. Stevens, first vice-president; Edna L. Barney, second vice-president; T. Henshaw Kelly, secretary-treasurer; Leo Eloesser, librarian; William Ophüls, R. Knight Smith, Langley Porter, Walter W. Boardman, Harry Walter Gibbons, Alfred T. Zobel and William Palmer Lucas were elected directors to serve terms of three years.

On December 5, 1927, the regular meeting of the Franklin Hospital Clinical Society was held at the hospital, Conrad Weil, chairman, presiding.

Otto Westerfeld presented a hydronephrotic kidney removed at operation and pyelograms showing a markedly dilated ureter below the kidney, the dilation beginning above a stricture which corresponded with the site of a previous appendectomy.

Conrad Weil presented a specimen removed at operation, the preoperative diagnosis having been divided between carcinoma of the cecum and appendicitis. At operation the lesion proved to be a carcinoma of the cecum bound down with adhesions.

Carl Werner presented two specimens obtained at autopsy. The first was the brain of a fifty-year old male with a hemorrhage from a small aneurysm of a branch of the carotid artery located in the brain substance one centimeter above the optic chiasm. The hemorrhage had destroyed the entire right anterior lobe and finally ruptured into the subdural space producing meningeal symptoms. The second specimen was the brain of an eight months infant which had been admitted to the hospital with meningeal irritation, xanthochromatic spinal fluid containing free red cells and no bacteria. The infant died five days after admission. Marked pyrexia and autopsy showed a flat hemangioma of the dura 1.5 centimeters in diameter, and located in the left middle jossa. The hemangioma had ruptured, probably during a coughing fit, and extensive bleeding had occurred from it.

T. HENSHAW KELLY, *Secretary.*

SAN JOAQUIN COUNTY

The annual meeting of the San Joaquin County Medical Society was held Thursday, December 1, 1927. The society met at the banquet table, Hotel Lido, Wilson Way, Stockton, Dr. J. W. Barnes presiding. The meeting was called to order at 8:30 p. m. Thirty-seven were in attendance. Dr. Edgar L. Gilcreest of San Francisco was the guest and speaker of the evening.

The minutes of the previous meeting were read and approved. The Chair appointed Drs. F. S. Marnell, Percy B. Gallegos and Harry E. Kaplan to act as tellers.

A letter from Dr. Walter F. Donalson, secretary of the medical society of the state of Pennsylvania, recommending the transfer of R. C. Kirkwood, member of the Alleghany County Medical Society of Pennsylvania was read.

Action: Moved by the secretary, seconded by Dewey R. Powell, that R. C. Kirkwood be voted a member of this society on recommendation of the secretary of the medical society of the state of Pennsylvania. The motion carried. The Chair declared R. C. Kirkwood duly elected an active member of the society.

The applications for membership of Drs. Boyd M. Krout and D. V. Wiebe were read and referred to the committee on admission.

A letter from the chairman of the ethics committee recommending the rejection of the proposal of the Pacific Health and Hospital Service of October 28, 1927, was read.

Action: Moved by the secretary, seconded by Dr. G. H. Rohrbacher, that the society adopt the recommendation of the ethics committee. The motion carried.

The secretary was instructed to inform the Pacific Health and Hospital Service of the action of the society.

The Chair called for the report of the tellers. Those receiving the highest votes were John J. Sippy, C. F. English, Hudson Smythe, H. S. Chapman, R. T. McGurk, J. W. Barnes, Dewey R. Powell, Barton J. Powell, Fred J. Conzelmann.

The Chair declared the nine receiving the highest number of votes duly elected as members of the board of directors.

The Chair declared the nomination for president in order. Dr. John J. Sippy was nominated and elected by acclamation. Dr. R. T. McGurk was elected first vice-president; Dewey R. Powell, second vice-president; and Fred J. Conzelmann, secretary-treasurer, all without opposition.

Dr. J. W. Barnes and Barton J. Powell were elected delegates, and Dr. Fred J. Conzelmann and Dr. C. V. Thompson alternates for the California Medical Association.

The report of the secretary-treasurer for the year was read, approved, and ordered filed.

A vote of thanks and appreciation was extended to the secretary-treasurer for his services.

The Chair introduced Doctor Gilcreest, speaker of the evening. Doctor Gilcreest spoke on the subject "Cults, Quacks, and Cures."

"California is becoming a mecca for health cults," said the speaker. He briefly reviewed the history of quackery and cults. Cultists and healers never bother themselves to learn the causes of things. When they want to make a sick person well they do not study the causes of disease or examine the body and its various organs. All they have in mind is their wish that the patient be well and that they can convince or persuade the patient that he is well.

The beginning of knowledge is the study of causes, in medicine as in the rest of science. The making of a diagnosis by all procedures possible is essential to the science of medicine and non-essential to the cultist.

The cultist believes that by wishing or willing anything hard enough he can get it. Science recognizes the power of the will in accomplishment, but willing or wishing for science constitutes merely the beginning of achievement, not the end.

The cultist is always a solitary worker. One person of outstanding personality like Coué or Slatterer, who by an intuition or inspiration claim that they have seized upon the truth. The lesser lights, too, acknowledge no master and no colleague.

Science, however, is fundamentally cooperative. It builds generation after generation. Medicine does not deal wholly with drugs, serums vaccines but diet, sanitation, dental, nasal and intestinal cleanliness, also play a part. The cultist always emphasizes that the physician uses poisonous drugs.

In dealing with patients with chronic diseases the physician should bear in mind and explain to his patient that many diseases tend to get well of themselves, and that even in chronic diseases periods of betterment often occur irrespective of treatment. Even serious disorders which end fatally often have their periods of remission.

If the physician will make a more thorough examination of the patient, add a few tactful words in regard to the present condition and suggest that the patient return in three, six or twelve months for a

check-up, it will serve to reassure the patient and keep him from running to quacks and cultist.

As long as the people desire to be fooled there will always be fads which have their little day, but when these, like an infectious disease, have run their course, medicine will still be the mainstay of mankind in its battle against disease. It is the physician's duty to inform both his patients and the public about the true and false in medical matters.

There being no further business the meeting adjourned at 11 p. m.

FRED J. CONZELMANN, *Secretary.*

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SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held on December 12 at the Cottage Hospital, with President H. E. Henderson in the chair.

The meeting was called to order, and Doctor Lewis, in a short talk, requested that all the members cooperate with Mr. George E. Coleman by taking out membership in the American Association for Medical Progress.

Doctor Evans then gave a very interesting talk on "Unusual Electrocardiograms," with demonstrations. This paper was discussed by Doctors Koefod, Henderson and Means.

The next paper was "Simple Management of Achlorhydria Gastrica" by Dr. H. G. Gray, outlining the symptomatology, treatment and prognosis from a study of fifty cases.

This was discussed by Doctors Freidell, Sansum and Ullmann.

A short report of a clinic by Faber of Copenhagen on achylia was given by Dr. Koefod.

Resolutions concerning Doctor Bagby's death were read and copies ordered sent to CALIFORNIA AND WESTERN MEDICINE, Mrs. Bagby, and a copy placed on file.

Doctor Henderson appointed as a committee for the annual banquet, Doctors Ullmann, Wills and Eaton.

An invitation to attend Doctor Krause's clinic in San Diego during the week beginning January 23, 1928.

There being no further business the meeting adjourned.

WILLIAM H. EATON, *Secretary.*

DEATHS

Brooke, William A. Died at Half Moon Bay, December 10, 1927. Age 63 years. Graduate of the Cooper Medical College, California, 1897. Licensed in California, 1898. Doctor Brooke was a member of the San Mateo County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Cox, Roy Milo. Died at Chicago, Illinois, September 4, 1927. Age 37 years. Graduate of the College of Physicians and Surgeons, California, 1914. Licensed in California, 1915. Doctor Cox was a member of the San Luis Obispo County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Grinstead Marion O. Died at San Francisco October 28, 1927. Graduate of the University of California Medical School, 1927. Licensed in California, 1927. Doctor Grinstead was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

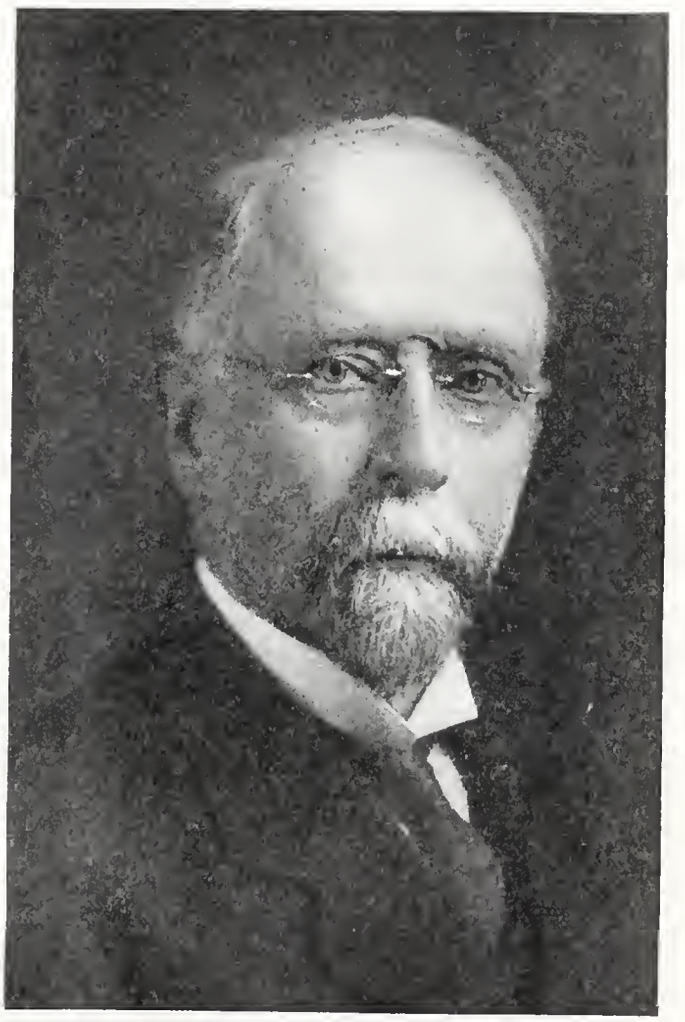
Kegley, Eugene A. Died at Los Angeles, October 31, 1927. Age 52 years. Graduate of the Northwestern University Medical School, Illinois, 1891. Licensed in California, 1921. Doctor Kegley was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Rogers, Thomas N. Died at Los Angeles, October 2, 1927. Age 69 years. Graduate of the Victoria University Medical College, Canada, 1889. Licensed in California, 1924. Doctor Rogers was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Tillotson, Clarence A. Died at San Francisco, October 26, 1927. Age 61 years. Graduate New York University Medical College, 1891. Licensed in California in 1910. Doctor Tillotson was a member of the Tulare County Medical Society, the California Medical Association, and the American Medical Association.

OBITUARIES

Wallace Alvin Briggs was born in Ohio in June, 1848, was graduated in medicine in 1871 by the University of Michigan, did postgraduate work in the United States and in Europe, practiced for a short



Wallace Alvin Briggs

time in his native state, came to California in 1877 and, after a few months of practice in smaller towns, located in Sacramento. Here for fifty years he lived and practiced his profession, with an interlude in 1913-14 for European travel and study, and here on November 26, 1927, in his eightieth year he died. He joined the Sacramento Society for Medical Improvement in 1877, was a member for a longer period than any one else has ever been and was our senior member when he passed away, retaining full possession of his faculties and his interest in medicine until the last. This was, in brief outline, the life of Dr. W. A. Briggs.

But this bare outline utterly fails to suggest in any way the full and intelligent life of the man. And it is difficult for those of us whose knowledge of medical thought and medical men has been gathered only in these later years to realize the large place he filled for years in the medical life of the community both here and throughout the state. Doctor Briggs' almost complete withdrawal from medical contacts during these

later years had made him, even during his lifetime, almost a legendary figure among the profession.

In the course of his long life he developed an enormous general family practice, the burden of which would have crushed many a physician into mere mediocrity. But Doctor Briggs was a student with an open and inquiring mind and, in spite of the detail of this great general practice, or better, because of the wealth of material that was illuminated by his study, reasoning and experience, he became eminent in every branch of medicine. He did not specialize in internal medicine, yet for years he was our most valued practitioner and consultant therein. He did not specialize in obstetrics, yet he attended and recorded over 3500 confinements before he gave up this branch of medicine. He did not specialize in gynecology, but his reputation therein was not merely local but extended throughout, and beyond the borders of, this state. He did not specialize in electrotherapeutics, but at a time when no one else in the community was doing anything with this subject he had what was for the time an elaborate equipment and a rational understanding of the procedures. He was no trained laboratory man, yet twenty years ago, when vaccine therapy was in its infancy, he was employing a trained laboratory physician to make autogenous vaccines for his patients in his own laboratory. During the many years when he practiced surgery, he was a competent and conservative general surgeon. Whatever he did he did well.

And through it all he found, or rather made, time to keep up his medical reading. Many of us can remember, in the preautomobile days, the little two-horse, closed coupe, with old John on the box, in which Doctor Briggs made his professional rounds, an enormous pocket in either door stuffed with journals and other medical literature between which sat Doctor Briggs reading, taking magazines from one door pocket and, when finished, stuffing them in the other. He never failed even in old age to thus keep up with the latest thought in medicine. Those who were privileged in his later years to have him as a consultant were amazed by the familiarity he showed with the most recent medical literature. Mentally he never grew old and though increasing years gradually required the abandonment of many lines of practice, his interests were always those of a general practitioner and he will be remembered both by the profession and by the public which he served so long and so faithfully, as the fine, almost perfect flower of the general practice of medicine. But times have changed. General practice no longer attracts, and it is doubtful if we ever see his like again.

It would seem that such a medical life as is outlined above might well absorb all of one fragile man's time and strength. But not so with Doctor Briggs. His supreme quality was intelligence. He was an intellect personified, and the range of his interests covered not only all phases of his chosen profession, but many matters of general interest. He did his share in civic matters, even finding time to serve as one of the Board of Freeholders which in 1911 prepared Sacramento's Commission form Charter. He wrote freely, not only on medical topics but on subjects of political or moral interest. He kept himself abreast of the times in art and literature, retaining to extreme old age his activity and receptivity of mind in matters of general culture, as well as in medicine. At sixty-five years of age, although already reading and speaking French and German, he learned to read Italian, and he published his great anthology of poetry only a few months before his death. Dr. Wallace Alvin Briggs was one of whose life the medical profession may be proud, not only as a physician but as an example of an active, far reaching and enduring intelligence.

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Henry Clay Bagby

Henry Clay Bagby was born in 1861, settling in Santa Maria at the age of twenty-one. He took up the general practice of medicine and surgery and continued at this work until 1890.

During this period he made an association with Dr. William T. Lucas which continued for six years.

It was the opinion of those intimately associated with him that he was a close observer and a splendid clinician. He was honorable, painstaking, and eminently successful in his work, being extremely ethical in all of the contacts with his colleagues.

After seven years of strenuous country practice, in which his sleep was constantly broken by long night rides behind the slow-going horse, he decided that his health was suffering. With his usual intelligent facing of facts he hit upon dentistry as an outlet for his energies.

In September of the year 1890, almost forty years ago, he went to Baltimore, which was then one of the centers for the study of dental surgery. His work at Baltimore was characterized by that intensive application which has always been one of Doctor Bagby's outstanding qualities. This enabled him to graduate with honors at the head of his class.

The doctor then returned to Santa Maria, but an opportunity arose which would enable him to make contact with some interesting problems in tropical medicine and their relationship to the study of gingival disease. This work took him to Guatemala, where he remained for about one year and a half.

On returning to California he again settled in Santa Maria.

In 1916 he settled in Santa Barbara, where he has taken the lead in his specialty of pyorrhea.

Toward the latter part of his practice he had evolved many new ideas relative to the matter of "trench mouth," which work alone was demanding most of his time.

Doctor Bagby, beside his professional work, was keenly interested in all things pertaining to civic and public questions, doing some splendid work while serving his term in the legislature.

It Is Hereby Resolved, That the medical society of the county of Santa Barbara, of which he was a past president, has sustained a great and very real loss in the passing of Doctor Bagby.

Be It Further Resolved, That the members of this organization desire to extend their heartfelt sympathy to Doctor Bagby's family and friends, for the former were very close to him, and of the latter there were a myriad.

Harry L. Schurmeier, M. D.
M. Thorner, M. D.
Committee.

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Oscar Mansfeldt

After all I hear of this good man's selfless life I wish I had known him better. I find myself envying his patients and his dear ones, for they derived a splendid benefit from his quick sympathy and his intense understanding of joy and of sorrow.

It would seem to me, from what I am told, that his sensitive introspective nature held him back from intimate relationship with others who would have understood and gratefully valued his noble manhood and his ability. I can imagine him unhappy, beyond words, when this sensitiveness prevented him from following his great urge to serve all humanity, not only professionally but in closest fellowship.

His conspicuous zeal and ability were heritages from his great father, Hugo Mansfeldt; his gentleness a heritage from his sweet mother.

In his early youth music came to him, and under the tutelage of his father he grew to be a brilliant pianist and utilized this gift to overcome the hard problems of life and consummate his ambition to become a physician. Indeed, after his graduation in 1897, standing fourth in his class, he continued to teach the piano for the glorious purpose of serving the people; all the while suffering from the most intense migraine. He endured the severe pain of this malady until he was forty-seven years of age. To see him at his work

and hear him giving freely of himself to others, one could not realize how keenly he suffered physically.

His whole life, a melody bringing peace to others yet holding sad strains for himself, he played bravely on.

We who honor him for his fine philosophy of conduct express in these few inadequate words his worth to our profession and to all those whose good fortune brought them into contact with him.

COUNCIL MINUTES

Approved at the One Hundred and Seventy-First Meeting of the Council

Minutes of the One Hundred and Sixty-Seventh Meeting of the Council of the California Medical Association—Held in Room 242 of the Biltmore Hotel, Los Angeles, California, Sunday, April 24, 1927, at 8 p. m.

Present—Doctors McArthur, Gibbons, Phillips, Day, Hamlin, Kinney, Kiger, DeLappe, Shephard, Coffey, Harris, Rogers, Catton, Kress, Shoemaker, Curtiss, Pope, and General Counsel Peart.

Absent—Doctors Peers and Bingaman.

1. **Call to Order**—The meeting was called to order by the acting chairman, Morton R. Gibbons.

2. **Report of the Council**—The report of the Council as prepared by the acting chairman was read by Doctor Gibbons and discussed section by section incorporating some changes in phraseology. It was stated that this report would be presented at the first general session and at the first meeting of the House of Delegates.

Action by the Council—On motion of Hamlin, seconded by Phillips, it was

Resolved, That the report of the Council, as amended, be adopted.

3. **Financial Statement**—The secretary presented the audit of the books of the Association as prepared by Hugh Ross, public accountant, for the year 1926.

Action by the Council—On motion of DeLappe, seconded by Rogers, it was

Resolved, That the audit of accounts for the year 1926, as presented, be approved.

4. **Report of the Secretary**—The secretary read the annual report of the secretary as prepared for the year 1926. A minor change in the wording of the sentence having to do with the reserve funds was suggested, after which the report was unanimously approved.

5. **Report of the Committee on Scientific Program**—As chairman of the Committee on Scientific Program, the secretary presented the report of that committee, which outlined the work done by the section officers, county secretaries, and the Arrangements Committee during the past year.

Action by the Council—On motion of Catton, seconded by Kinney, it was

Resolved, That the report of the Committee on Scientific Program be adopted as read.

6. (See footnote.)

7. (See footnote.)

8. **Incorporation of the Association**—The general counsel stated that he had prepared an amendment to the Constitution to permit the incorporation of the Association. Mr. Peart stated that the amendment would be introduced this year, and could be adopted next year by the House of Delegates.

9. **Adjournment**—There being no further business the meeting adjourned to meet at 2:30 p. m. Monday, April 25, 1927.

Minutes of the One Hundred and Sixty-Eighth Meeting of the Council of the California Medical Association—Held in Room 242 of the Biltmore Hotel, Los Angeles, California, Monday, April 25, 1927, at 2:30 p. m.

Present—Doctors McArthur, Gibbons, Phillips, Day, Hamlin, Kinney, Kiger, DeLappe, Shephard, Coffey, Harris, Rogers, Peers, Catton, Kress, Shoemaker, Curtiss, Pope, and General Counsel Peart.

Absent—Doctor Bingaman.

1. **Call to Order**—The meeting was called to order by the acting chairman, Morton R. Gibbons.

2. **Adjournment**—Dr. Oliver D. Hamlin stated that as the docket was small and several of the members of the Council were anxious to attend section meetings, he would entertain a motion that the meeting adjourn until 4:30 p. m. Such motion was made and unanimously carried.

Adjourned Meeting of the Council of the California Medical Association—Held in Room 242 of the Biltmore Hotel, Los Angeles, California, Monday, April 25, 1927, at 4:30 p. m.

Present—Doctors McArthur, Gibbons, Phillips, Day, Hamlin, Kinney, Kiger, DeLappe, Shephard, Coffey, Harris, Rogers, Peers, Catton, Kress, Shoemaker, Curtiss, Pope, and General Counsel Peart.

Absent—Doctor Bingaman.

1. **Call to Order**—The meeting was called to order by the acting chairman, Morton R. Gibbons.

2. **Legislative Committee**—Harlan Shoemaker, chairman of the Legislative Committee stated that he was desirous of meeting with the other members of his committee before reporting to the Council and requested that his report be heard at a later meeting, which request was granted.

3. **Medical Activities Committee**—Letter from Doctor Graves, chairman of the Medical Activities Committee, was read, wherein he advised of the change of plans of his committee made necessary by councilor action allotting only such time as is regularly allowed to a section meeting to his program. Doctor Kinney, member of the Medical Activities Committee, stated that it was his belief that Doctor Graves should be invited to come before the Council and discuss the future plans of the committee.

Action by the Council—On motion duly made and seconded, it was

Resolved, That the matter of medical activities be continued until the next meeting of the Council and the secretary be requested to invite Doctor Graves to meet with the Council at that time.

4. **Committee on Revising the Constitution**—Dr. George H. Kress, chairman of the Committee on Revising the Constitution, advised that in accordance with the action of the Council he had had printed copies of the Model Constitution and By-Laws of the American Medical Association for distribution at the first meeting of the House of Delegates and that Mr. Peart had brought in a number of amendments which he had considered desirable. Doctor Kress stated that at the first House of Delegates meeting he proposed to ask all members to suggest any amendments they considered worthy, and that at the second House of Delegates meeting all amendments would be offered and presented. Later all amendments with alternate propositions would be codified and printed in California and Western Medicine, so that in 1928 it would be possible to discuss the propositions intelligently.

5. **Walter Reed Memorial**—William H. Kiger, chairman of the Committee on the Walter Reed Memorial, advised the Council that he had received approximately $200 or $300 for the fund and that the committee was still active.

Action by the Council—On motion of Catton, seconded by Phillips, it was

Resolved, That the Committee on the Walter Reed Memorial be continued.

6. **Committee on the Medical Practice Act**—Dr. George H. Kress, chairman of the Committee on the Medical Practice Act, advised the Council that the Board of Medical Examiners had submitted several amendments to the present act at the legislature. Doctor Kress suggested that the committee be continued so that it might study the Medical Practice Act, and if amendments were considered advisable, devise ways and means of bringing them before the

Footnote—Minutes Nos. 6 and 7 pertain to the question of a permanent home, and will be published in due time.

legislature. Dr. Harlan Shoemaker informed the Council that all amendments that were proposed by the Board of Medical Examiners had been passed and signed by the Governor.

Action by the Council—On motion of Rogers, seconded by Phillips, it was

Resolved, That the report of the Committee on the Medical Practice Act be accepted and the committee continued.

7. **Clinical Prizes**—Dudley Fulton, chairman of the Committee on Clinical Prizes, submitted the following report:

The committee recommends that the essay entitled "The Diagnosis of Drunkenness," under the nom de plume of "Aretaeus," be awarded the prize for research work.

The following recommendations are respectfully submitted to the Council:

(1) That the policy of holding those competitions for research and clinical prizes be continued.

(2) That this competition for prizes be given much more publicity than in the past. It is the belief of the committee that this might be accomplished by the following methods:

(*a*) That an announcement be made in each section of the society, urging greater interest in the competition.

(*b*) That more frequent mention of the matter be made in the state journal.

(*c*) That the secretary of the society remind each component society, which might be of benefit in keeping the matter before the individual members of the society.

(3) That there be a change of two members of the Clinical Prize Committee each year.

Discussion was had on the report as submitted, and it was recommended that not more than one member of the committee be replaced each year. Doctor Fulton informed the Council that the present members of the committee were desirous of being relieved, but would abide by the decision of the Council.

Action by the Council—On motion of Phillips, seconded by DeLappe, it was

Resolved, That the report of the committee be accepted, except that sentence which recommends that two members of the committee be changed each year; that the prize be awarded to the author of the article on "The Diagnosis of Drunkenness" as recommended by the committee; and that the Council elect a committee consisting of three members: one member to be elected for three years; one for two years; and one for one year.

8. **Adjournment**—There being no further business the meeting adjourned to meet in the same place at 2:30 Wednesday, April 27, 1927.

One Hundred and Sixty-Ninth Meeting of the Council of the California Medical Association—Held in Room 242, Biltmore Hotel, Los Angeles, California, April 27, 1927, at 2:30 p. m.

Present—Doctors McArthur, Gibbons, Phillips, Day, Hamlin, Kinney, Kiger, Bingaman, DeLappe, Shephard, Coffey, Harris, Rogers, Peers, Catton, Kress, Shoemaker, Curtiss, Pope, and General Counsel Peart.

Absent—None.

1. **Roll Call**—The meeting was called to order by the acting chairman, Morton R. Gibbons.

2. **Medical Activities Committee**—Proposed letter from the Council to Dr. John H. Graves, chairman of the Medical Activities Committee, was read and approved.

3. **Councilor Terms**—The question of arranging the terms of councilors so that five would expire each year was discussed, and it was decided that the matter be referred to the General Counsel.

4. **Clinical Prizes**—Discussion was had as to a method of securing more papers for the clinical prize contest. It was stated that some papers read before section meetings were the result of much research and were worthy of submission for the prizes. It was suggested that the date of submission of such papers might be set as December 1, which would permit of their being judged before any printed record appeared in the program or journal. Doctor Catton stated that the matter had been discussed at the section secretaries and Program Committee luncheon, whereupon he was asked to submit a plan to the Council for submission of such papers.

The chairman then announced that nominations for members of the Clinical Prize Committee were in order.

Action by the Council—On motion of Phillips, seconded by Catton, it was

Resolved, That Dr. George Dock be appointed chairman of the Clinical Prize Committee for a period of three years.

Action by the Council—On motion duly made and seconded, it was

Resolved, That Emmet Rixford be appointed member of the Clinical Prize Committee for a period of two years.

Drs. Eugene Kilgore and C. L. Callander were nominated for the one year term. A vote was taken and Doctor Kilgore, having received the majority, was named a member of the Clinical Prize Committee for a period of one year.

5. **Industrial Medical Practice**—Letter from Dr. Philip Stephens, chairman of the Committee on Industrial Medical Practice, submitting his resignation, was read.

Action by the Council—On motion of Catton, seconded by Kinney, it was

Resolved, That the resignation of Philip Stephens be accepted and that the thanks of the Council be accorded him for the work he has accomplished as chairman of this committee.

Doctor Kinney stated that he had talked with Doctor Stephens and that the name of Dr. Gayle Moseley had been suggested as chairman of the committee.

Action by the Council—On motion of Kinney, seconded by Curtiss, it was

Resolved, That Gayle Moseley be appointed chairman of the Committee on Industrial Medical Practice.

At this point Dr. John H. Graves entered the session by invitation of the Council.

6. **Medical Activities Committee**—Letter from the Council expressing regret that changes in the program of the Medical Activities Committee were made necessary on account of change in councilor action, was presented to Doctor Graves, who requested that some minor additions be made, and that copy of the letter be forwarded to Chester H. Rowell, which request met with the approval of the Council.

Doctor Kinney advised the Council that the Committee on Medical Activities had held two meetings since the annual meeting convened and that Doctor Graves was anxious that the work of the committee be limited to hospital standardization work, and not extended to include the larger field, as the committee could do this work well. Doctor Kinney stated that it was desirable that the work of the committee be defined as hospital standardization or betterment.

Action by the Council—On motion of Catton, seconded by McArthur, it was

Resolved, That the system of Doctor Graves and the report of Doctor Kinney be accepted as a progress report.

7. **Legislative Committee**—Dr. Harlan Shoemaker, chairman of the Legislative Committee, outlined the plan of procedure which had been followed by the Legislative Committee.

Action by the Council—On motion of Phillips, duly seconded, it was

Resolved, That the report of the Legislative Committee be approved.

8. **Membership Campaign**—The advisability of conducting a membership drive as suggested in Doctor Kress' editorial was discussed. Robert Peers spoke of

the necessity of close supervision of all applicants for membership bearing in mind that character was the chief requisite, with intelligence and medical training as secondary factors. Mr. Peart then discussed the reaction of a former drive.

In connection with Doctor Kress' editorial it was stated that the word "drive" be eliminated and the word "campaign" substituted therefor and that the next to the last paragraph be deleted.

Action by the Council—On motion of Shephard, seconded by Hamlin, it was

Resolved, That the editorial be published, as amended.

9. **Charters to County Societies**—Discussion was had as to the feasibility of chartering all county societies now members of the Association in order to be assured that no society had failed to receive a charter from the State Association.

Action by the Council—On motion of Phillips, seconded by Shephard, it was

Resolved, That all county societies that are now component societies of the California Medical Association be granted charters and notice of such action be sent to them, together with charter.

10. **Editorship**—Letter from Dr. Sol Hyman regarding the editorship of the Journal was read by the secretary.

Action bp the Council—On motion of Hamlin, seconded by Rogers, it was

Resolved, That the letter be received and placed on file.

11. **Place of 1928 Meeting**—Doctor Phillips asked that as a matter of personal privilege the place of the 1928 meeting be considered as the next order of business. The secretary read invitations from various cities and hotels in California. Dr. Junius Harris spoke of the excellent facilities for handling large conventions at Sacramento.

Action by the Council—On motion of Shoemaker, seconded by Peers, it was

Resolved, That the 1928 annual meeting be held at Sacramento, date of meeting to be decided later.

Doctor Kinney stated that for several years San Diego had yielded the convention in favor of other cities and that in 1928 it was the intention of the city to invite the Association to hold the 1929 session there.

12. **Bubonic Plague**—Letter from Dr. George E. Ebright outlining the plague situation was read by the secretary. As Dr. George H. Kress was familiar with the situation, he stated that he would discuss the matter with Doctor Ebright.

13. **Sir William Osler**—Telegram from A. S. Musante, chairman of the public health section of the Commonwealth Club, asking that a committee be appointed to work in cooperation with the Commonwealth Committee in furthering the celebration of the birth of Sir William Osler, was read.

Action by the Council—On motion of Coffey, seconded by Catton, it was

Resolved, That William T. McArthur be appointed to represent the State Association with power to appoint his own committee.

14. **Delegates to the A. M. A.**—Letter from Doctor Soiland asking that instructions be given delegates to the A. M. A. was read. Doctor Hamlin pointed out the desirability of delegates being familiar with the problems of the Association.

Action by the Council—On motion of Phillips, seconded by Catton, it was

Resolved, That Doctor Hamlin and Doctor Day be appointed a committee of two to report at the next meeting of the Council on a plan whereby this problem may be met.

Letter from Doctor Vecki regarding terms of delegates to the American Medical Association was read and placed on file.

15. **Technical Specialties**—Doctor Gibbons informed the Council that technical specialties had been discussed by the Executive Committee and it was recommended that the whole matter be referred to a committee for investigation. It was pointed out that the present Committee on Technical Specialties was too widespread to be effective. Doctor Gibbons stated that it had been suggested that the whole matter be referred to the Medical Activities Committee for investigation, study and report, and stated that as there was no objection the entire file would be referred to that committee.

Action by the Council—On motion of Catton, seconded by Day, it was

Resolved, That the matter of technical specialties be referred to the Medical Activities Committee with the request that the committee study the present situation and report to the Council.

16. **Affiliate Members**—The approval of the Council was asked in the matter of granting affiliate memberships to George Bell, Fairoaks, Sacramento County; and C. L. Six, Stockton, San Joaquin County.

Action by the Council—On motion of Hamlin, seconded by Peers, it was

Resolved, That George Bell, Fairoaks, Sacramento County, and C. L. Six, Stockton, San Joaquin County, be granted affiliate memberships and are hereby elected the same.

17. **Councilor Visits**—Kinney, First District—We have been marooned on a little island since January 1, and I have attended only one meeting at San Bernardino. I tried to go to Riverside. All four counties in my district have wide-awake societies. They have monthly meetings. The only criticism that can be made is that it is impossible to create any interest in the medical society of the state of California. I have tried every way possible. So far as scientific work is concerned, all are doing all we could ask.

Hamlin, Seventh District—In Alameda County the Council of the society meets every Tuesday and discusses matters of importance. There are a number of doctors who have recently come to Alameda who are not members of the society. There is a move to keep all applicants on probation for six months or a year. Contra Costa is a small county. Hardly any of the licensed doctors in the county are not members. Their meetings are sometimes held in their own residences. The scientific programs are all very good. I have not had an opportunity to visit San Joaquin or Calaveras.

Bingaman, Third District—I have visited San Luis Obispo. They seem to be getting along very well, the only trouble being the small membership. There is a new county hospital now under construction in the county which is the only problem they seem to have. Monterey County is getting along very satisfactorily. We are trying to devise means of eliminating the possibility of having other than desirable men as members.

Catton, At Large—The reports of San Francisco County are good. We now have a new home. The society felt that the medical profession would go ahead faster and get more enjoyment out of the meetings if something of this kind were done. San Francisco members have pledged themselves for $200 for this new home. We are holding regular meetings every month. The board of directors is also meeting every month.

Kiger, Second District—I am on the mailing list in the four counties in my district. Santa Barbara has a very active society. Ventura consists of three little towns: Ventura, Oxnard, and Santa Paula. I have made a number of visits to keep the society alive. Orange has a very active society and has very good programs.

DeLappe, Fourth District—I have visited all counties in my district with the exception of Tuolumne. Merced has the medical men of Mariposa County on the mailing list. Fresno has members of Kern and Madera. They have very good meetings from the standpoint of scientific merit and attendance. The membership has been increasing during the past year.

Shephard, Fifth District—I believe Santa Clara County has a larger percentage of members of eligibles than any other society. The majority of the mem-

bers are in and around San Jose. Our hospital facilities are rather unique. We have two good hospitals controlled by the same group. No man is allowed to take patients into these hospitals who is not a member of the County Medical Society. Consequently new men are very anxious to become members of the society. The meetings are well attended. At practically every meeting we have a dinner. The question of county hospitals is our one problem. We have a most excellent county hospital. I have not been able to visit San Mateo County, as they meet on the same night as Santa Clara. I have left Santa Cruz to Doctor Phillips. San Benito has no active medical society. There are only six or seven doctors. I have received the suggestion that we employ a circulating advisor who could appear at the various luncheon clubs and tell what has been done by the medical profession in the way of betterment of medical conditions. I would like to suggest that you give this thought, as it might be well to have someone appear before these various clubs and call attention to the health conditions of today as compared with those of years ago.

Harris, Eighth District—I have visited Yuba-Sutter. They have very successful meetings. Sacramento is getting along very well. When our new hospital is completed we will follow out the same plan as Alameda. We will arrange for social service work in the county hospital, which will do away with taking patients who are able to pay.

Rogers, Ninth District—I am a new councilor and, being unfamiliar with the practices, have not visited very much during the year. I visited Sonoma County. They have quite an active society. Each year we have a joint meeting with Mendocino County at Cloverdale. This year I hope to visit all the counties.

Curtiss, At Large—I visited Riverside, San Bernardino, and Orange. They are rather inactive. They have no constructive programs to offer. I believe it is a good thing to stress what is going on in the Council and try to make the societies realize what the State Association is doing. I believe the suggestion of a liaison officer is a very good one.

18. **Adjournment**—There being no further business the meeting adjourned to meet at 11 a. m. Thursday, April 28, 1927.

One Hundred and Seventieth Meeting of the Council of the California Medical Association—Held in Room 242, Biltmore Hotel, Los Angeles, California, Thursday, April 28, 1927, at 11 a. m.

Present—Doctors Gibbons, Kiger, Phillips, Kelly, Hamlin, Kinney, Duffield, Bingaman, DeLappe, Shephard, Coffey, Harris, Rogers, Peers, Catton, Kress, Shoemaker, Curtiss, Pope, and General Counsel Peart.

Absent—None.

Invited—Drs. Hubert Work and W. T. McArthur.

1. **Call to Order**—The meeting was called to order by the acting chairman, Morton R. Gibbons.

2. **Dr. Hubert Work**—Dr. Hubert Work, Secretary of the Interior, being present at the convention as an invited guest, addressed the Council. Doctor Work spoke of his work in the field of medicine and expressed the sentiment that he had an ever present interest in medicine.

3. **Election of the Chairman of the Council**—Dr. Oliver D. Hamlin, chairman of the Council, informed that body that Doctor Gibbons had been acting in his absence during the greater part of the year and was thoroughly familiar with the work of the Association.

Action by the Council—On nomination of Hamlin, seconded by Shephard, Morton R. Gibbons of San Francisco was unanimously elected chairman of the Council to succeed Oliver D. Hamlin for the ensuing year.

4. **Appointment of the Secretary**—Action by the Council: On motion of Kress, seconded by Phillips, it was unanimously

Resolved, That Emma W. Pope of San Francisco be appointed secretary of the California Medical Association for the ensuing year at her present salary.

5. **Appointment of the Editor**—Action by the Council: On motion of Catton, seconded by Hamlin, it was

Resolved, That Dr. George H. Kress and Dr. Emma W. Pope be continued and hereby appointed as associate editors under the same provisions and conditions as set forth in the resolution of the Council adopted at its one hundred and sixty-sixth meeting, March 19, 1927.

6. **Resignation of Assistant to Editor**—The secretary reported that Miss Sue Van Wagenen, who had held the position as assistant to the editor under Doctor Musgrave, had now tendered her resignation to take effect June 1, 1927. Miss Van Wagenen had accepted a position at the Cottage Hospital in Santa Barbara. The secretary on behalf of the editors stated that it was thought it would not be necessary to appoint anyone in Miss Van Wagenen's place.

The Council accepted the resignation of Miss Van Wagenen with a grant of two weeks' vacation, which was due Miss Van Wagenen, such vacation to begin May 15, 1927.

7. **Salaries**—The secretary called attention to the fact that Miss Bradford, Miss Comings and Miss Bignami, in the secretary's office, had received no recent increase in their salaries although they had been faithful and efficient in the work of the Association during the last several years.

Action by the Council: On motion of Hamlin, seconded by Peers, it was

Resolved, That the recommendations of the secretary be approved and that the salaries of said assistants be set as follows: Miss Bradford, $160 per month; Miss Comings and Miss Bignami, $150 per month, commencing May 1, 1927.

8. **Industrial Medical Practice**—Harlan Shoemaker introduced Gayle Moseley to the Council. Doctor Moseley spoke of the present situation in the industrial medicine field in California. Doctor Moseley suggested that the committee to handle industrial medicine consist of five members: one from Los Angeles, one from San Francisco, possibly one from San Diego, one member of the Council and himself as chairman, which committee would make a thorough study of the problem of industrial medicine during the next year. This committee would find out if possible the number of people being treated under this system, and how many employers are arranging to care for their employees in case of illness or accident, and the reaction of the employees.

Mr. Peart and other members of the Council spoke of the work that had been done in the past by the present committee. It was suggested that the committee of five of which Doctor Moseley would be chairman might work in cooperation with the present committee and be known as the Social Survey Committee or some similar name, which Doctor Moseley could select.

Action by the Council—On motion of Kress, seconded by Hamlin, it was

Resolved, That Dr. Gayle Moseley be requested to select a proper name for this committee; that he present names of members and a digest of his program to the Executive Committee at its next meeting, to which he shall be invited, and that the Executive Committee have the right to approve the proposal if it sees fit.

9. **Arrangements Committee**—Dr. Percy Phillips advised the Council that he had appointed the following members as the Committee on Arrangements for the 1928 meeting: Junius B. Harris, Sacramento, chairman; Robert A. Peers, Colfax; and Fred Fairchild, Woodland. Doctor Phillips stated that the committee might enlarge its personnel as it deems best to further its best interests.

10. **Auditing Committee**—Dr. Morton R. Gibbons informed the Council that he had appointed as mem-

bers of the Auditing Committee, Oliver D. Hamlin, chairman; and T. Henshaw Kelly.

11. **Appointment of General Attorney**—Action by the Council: On motion of Catton, seconded by DeLappe, it was

Resolved, That the present General Counsel, Mr. Hartley F. Peart be reappointed to succeed himself for the ensuing year.

Doctor Hamlin called the attention of the Council to the fact that he believed the present retainer fee of Mr. Peart was inadequate and suggested that a committee be appointed to investigate the matter and report.

Action by the Council: On motion of Phillips, seconded by Peers, it was

Resolved, That the chairman of the Council and the chairman of the Auditing Committee constitute a committee to investigate the matter of the proper retainer fee for Mr. Peart.

12. **Appointment of the Assistant General Counsel**—Action by the Council: On motion of Kress, seconded by DeLappe, it was

Resolved, That Mr. Hubert T. Morrow of Los Angeles be reappointed to succeed himself as assistant general counsel for the ensuing year.

13. **Delegates to the A. M. A.**—Doctor Hamlin advised the Council that he had not yet had time to discuss the problem of instructing delegates to the A. M. A., but that he was strongly in favor of some plan being devised whereby the delegates would keep in close touch with the workings of the Association.

Action by the Council—On motion of Phillips, seconded by Catton, it was

Resolved, That the committee be continued.

14. **Advertising Agents**—The general counsel advised the Council that he would draw up new contracts covering commissions to advertising agents for California and Western Medicine which would protect the interests of the Association.

15. **Physicians Income Tax**—Dr. Harlan Shoemaker informed the Council that he had spoken to Granville MacGowan about the question of physicians' income taxes, and that Doctor MacGowan wished to retain the chairmanship.

16. **Annual Directory**—The question of including various informational data in the annual directory was discussed.

Action by the Council—On motion of Kress, duly seconded, it was

Resolved, That the matter of the annual directory be referred to the Executive Committee.

17. **Minutes of the One Hundred and Sixty-Sixth Meeting of the Council**—Action by the Council: On motion of Phillips, seconded by Catton, it was

Resolved, That the minutes of the one hundred and sixty-sixth meeting of the Council as mailed to all members be approved.

18. **Minutes of the Ninety-Eighth Meeting of the Executive Committee**—Action by the Council: On motion duly made and seconded, it was

Resolved, That the minutes of the ninety-eighth meeting of the Executive Committee be approved as mailed to all councilors.

19. **Group Insurance for Physicians**—Doctor Kress stated that discussion had taken place on the matter of securing insurance benefits for members of the Association and that the plan appeared to be practicable and desirable.

Action by the Council—On motion of Kress, seconded by Catton, it was

Resolved, That Drs. W. B. Coffey and Henry W. Gibbons be constituted a committee to investigate the matter of securing information on the group insurance plan for members of the California Medical Association.

20. **Medical Ethics in Medical Schools**—The secretary read a letter received from the American Medical Association asking that lectures on medical ethics be made a part of the curriculum in every approved medical school. It was the sense of the Council that the letter be referred to the Medical Activities Committee.

21. **Harrison Narcotic Act**—Letter from the American Medical Association enclosing memorandum relative to the promulgation of regulations under the National Prohibition and Harrison Narcotic Act be endorsed, and that Doctor Woodward be so notified.

22. **Physicians' Directory in Journal**—Discussion was had on the action of the Executive Committee regarding the elimination of the "Physicians Directory" from the journal.

Action by the Council—On motion of Catton, seconded by DeLappe, it was

Resolved, That the previous action of the Executive Committee be endorsed by this Council and that classified advertisements of physicians be eliminated at the expiration of the contracts or by voluntary withdrawal before the expiration of such contracts.

23. **Adjournment**—There being no further business the meeting adjourned.

UTAH STATE MEDICAL ASSOCIATION

W. R. CALDERWOOD, Salt Lake.....President
E. H. SMITH, Ogden.....President-Elect
FRANK B. STEELE, Salt Lake.....Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....
.....Associate Editor for Utah

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held in the Assembly Room, Medical Arts Building, Salt Lake City, Monday, November 28, 1927.

The meeting was called to order at 8:15 p. m. by President W. G. Schulte. Thirty-five members and two visitors were present.

Minutes of the previous meeting were read and accepted without correction.

George M. Fister of Ogden read a paper entitled "A Few Red Blood Cells in the Urine." He covered his subject thoroughly including the etiology, prognosis, and methods of diagnosis, and illustrated his paper by lantern slides showing x-ray films of interesting genito-urinary conditions. His paper was discussed by C. L. Shields, John Z. Brown, and W. G. Schulte.

Vice-President William F. Beer took the chair.

The next paper was on "Rheumatic Heart Disease in Childhood" by Eugene H. Smith of Ogden, president of the Utah State Medical Association. He took up in a masterly manner the pathology of rheumatism and the resultant changes in the heart itself. He illustrated his points by a chart summarizing one hundred of his own cases. This very interesting paper was discussed by L. E. Viko, W. R. Tyndale, W. R. Calderwood and Ralph Tandowsky.

The applications for membership signed by Bremer and Quick, and an application for transfer from Cache County signed by Eugene Worley were read.

The secretary read a communication from Intermountain Lloyds relative to group automobile insurance at a reduced rate. L. W. Snow moved that a committee of two be appointed to investigate the report. Seconded and carried.

A communication from Parke, Davis & Company requesting permission to exhibit a film, "How Biologicals are Made," was read. John Z. Brown moved that a committee of three be appointed to see a preview and decide whether or not the films should be shown. Seconded and carried.

Communication from F. W. Pottenger was read.

He stated his regrets that he was unable to read a paper before the society because of illness.

A letter from Willard Christopherson, city health commissioner, was read in which he requested cooperation of the society in the present campaign to administer toxin-antitoxin to all school children. Garland H. Pace moved that the society cooperate with the Board of Health. Seconded. Discussed by W. T. Ward, Clark Young and William F. Beer. Carried.

William F. Beer read his report on the banquet given in honor of the dentists. He moved that the society omit refreshments at the meeting on December 12. Seconded and carried. B. E. Bonar moved that the society extend the banquet committee a vote of thanks for the excellent manner in which the affair was carried out. Seconded and carried.

William T. Ward gave a preliminary report for his Committee to Investigate Institutions Caring for Charity Patients. He suggested that a carefully picked committee be appointed to give the existing conditions further study. William F. Beer added some remarks and John J. Galligan, city physician, reported on how the Emergency Hospital was run. John Z Brown moved that the same committee be continued and the chairman be authorized to choose members to help him. Discussed by W. T. Ward. Carried.

The proposed change in the By-Laws raising the dues from $10 to $15 and raising the admission fee to $20 after a member has been dropped for nonpayment of dues was read.

Adjournment at 11:10 p. m.

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A special meeting of the Salt Lake County Medical Society was held in the Assembly Room of the Medical Arts Building, Salt Lake City, Monday, December 5, 1927.

Meeting was called to order at 8:15 p. m. by President W. G. Schulte. There were seventy-five members and seven visitors present.

The speaker was Edgar Gilcreest of San Francisco, who spoke on Sir William Osler, physician and philanthropist. He held his audience spellbound with his talk, which emphasized especially the humane side of this great man.

Adjournment at 9:30 p. m.

M. M. Critchlow, *Secretary.*

Committees on Public Health, Arrangements and Public Policy and Legislation—Secretary Steel of the Utah State Association announces the following appointments to committees:

Commmittee on Public Health—W. R. Calderwood, chairman; H. B. Kirtley, John Z. Brown.

Committee on Local Arrangements for State Convention, 1928—Ezra C. Rich, chairman; F. K. Bartlett, J. R. Morell.

Committee on Public Policy and Legislation—A. C. Callister, chairman; F. J. Curtis, one to be appointed.

Medico-Dental Meeting—One of the outstanding events of the past month was the banquet extended by the Salt Lake County Society to the Dental Society. The function was held in the Elks' Club, with approximately 150 doctors and dentists in attendance.

Arrangements were made by Doctors Beer, Wright and Lester Paul. The banquet, which was decidedly a "get-together" gathering, was followed by orchestral music, a series of boxing bouts, and singing.

Dr. William Donoher, as toastmaster, called for responses from numerous members of both societies on subjects introduced in his happily facetious vein.

These mutual gatherings do much to cement friendship and good will.

Honor to Past Presidents of Salt Lake County Society—On the evening of December 7, Dr. William Schulte, retiring president of the Salt Lake County Society, entertained the past presidents of the society at a dinner in the New House Hotel, held quite appropriately, in the president's suite.

Twenty-five guests assembled and after dinner the "old-timers" indulged in reminiscences of the early medical history of the city and county.

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UTAH COUNTY

October 12, at the regular meeting, Dr. B. E. Bonar of Salt Lake City read a very interesting paper on "Diagnosis and Treatment of Pneumonia in Children." October 26, Dr. Floyd Hatch gave a paper on "Diagnosis of Renal Tumors." On November 9, Drs. Clarence Snow and Ralph Richards read papers on the "Medical and Surgical Aspects of Goiter." The November 3 meeting was a business meeting.

All the above meetings were held in the Roberts Hotel, beginning with a dinner, after which the scientific programs were held. The Utah Society regularly invites the wives of its members to the dinner on the first meeting night of each month. The ladies later amuse themselves as they see fit until after the close of the scientific program. Not a bad idea as we see it, and one which apparently works out well.

Arnold Robison, *Secretary.*

Meeting of the Holy Cross Hospital Clinical Association—The last meeting of the Holy Cross Hospital Clinical Association November 21, was very well attended both by members of the association and by the nursing body and visitors. The program has recently taken the form of case reports, and the exhibition of interesting patients was good and evoked a considerable discussion. Doctor Colonge showed and demonstrated apparatus designed to overcome joint disfunction following traumatic injuries. Doctor Flood, the pathologist, showed a number of interesting specimens. Doctor Hosmer gave a very complete discussion of soft-tissue trauma from the standpoint of anatomical recognition of muscle disfunction and the prevention of posttraumatic infection. Both interns reported cases. Election of officers will occur at the next meeting, December 19. The association invites all of the medical fraternity who desire to attend these meetings, which are regularly held on the third Monday of each month from September to May inclusive.

NEVADA STATE MEDICAL ASSOCIATION

W. M. EDWARDS.....President
G. F. SMITH.....First Vice-President
G. W. GREEN.....Second Vice-President
HORACE J. BROWN.....Secretary-Treasurer
W. A. SHAW, D. A. TURNER, S. K. MORRISON.....Trustees

TWENTY-FOURTH ANNUAL SESSION

Business Meeting—The business meeting was called to order by the president at 8:45 p. m. The reading of the minutes of the previous meeting was dispensed with on motion of M. A. Robison, seconded by T. W. Bath. The secretary's report on membership and finances was also dispensed with on motion by the same members.

The delegate to the American Medical Association not having been in attendance at the meeting of that body, M. A. Robison, who attended, made a short report. All of the points covered by Doctor Robison are contained in the annual report, which is on file in the secretary's office. The subject of venereal disease, with the idea of bringing out some method of control, was then discussed generally by all present, but no action was taken.

The Entertainment Committee made its report through D. A. Turner, who announced that the annual meeting would close with a dance to be held at the Century Club at 9:30 p. m., September 24, 1927.

The Necrology Committee then reported through T. W. Bath, who read a very eloquent obituary in memory of Dr. Simeon L. Lee. Moved by M. A. Robison, seconded by D. A. Turner, that this obituary be submitted to California and Western Medicine for publication. Carried.

The election of officers for 1928 was the next order of business:

President: M. A. Robison, seconded by T. W. Bath, nominated R. R. Craig of Tonopah for president.

D. A. Turner, seconded by E. L. Creveling, nominated W. M. Edwards of Yerington. D. A. Turner moved that the nomination be closed and that the election be by secret ballot, seconded by E. L. Creveling. Carried. Upon a poll of votes cast, W. M. Edwards, having a majority, was declared elected.

First vice-president: D. A. Turner, seconded by B. H. Caples, nominated G. F. Smith of Reno for first vice-president, who was unanimously elected.

Second vice-president: D. A. Turner, seconded by M. A. Robison, nominated G. W. Green of Ely for second vice-president, who was unanimously elected.

Secretary-treasurer: E. L. Creveling, seconded by D. A. Turner, nominated Horace J. Brown of Reno for secretary-treasurer; unanimously elected.

Trustee for three years: E. L. Creveling, seconded by M. A. Robison, nominated R. P. Roantree of Elko for trustee for three years; unanimously elected.

There being no further business to come before the meeting it was adjourned until 10 a. m., September 24, 1927.

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After the scientific program, published in the October issue of California and Western Medicine, a short business session was then held. The annual meeting for 1928 was discussed, and it was moved by A. J. Hood, seconded by D. A. Turner, that the meeting be held at Bowers' Mansion, with the date left to the judgment of the incoming officers. Motion carried.

Honorary members: Moved by C. E. Piersall, seconded by J. L. Robinson, that the Association extend their vote of thanks to all of our visitors and that such of them as participated in the program be made honorary members. Motion carried.

Motion by D. A. Turner, seconded by S. K. Morrison, that Mr. Lester J. Hilp be extended a vote of thanks for his cooperation, thoughtfulness and generosity in making the meeting a success. Unanimously and vociferously carried.

Several of the visitors expressed their thanks and appreciation to the Association for the courtesies shown them.

There being no further business the meeting was adjourned *sine die.*

The following members were in attendance at various times during the meeting: I. S. Egan, Earle L. Creveling, C. H. Lehners, H. J. Brown, P. J. Mangan, W. L. Samuels, Anna De Chenne, R. H. Hawkins, W. H. Hood, A. F. Adams, F. H. Harrison, D. A. Turner, M. A. Robison, E. E. Hamer, A. R. Da Costa, A. J. Hood (Reno), C. E. Piersall, L. P. Monson, J. A. Fuller, H. W. Sawyer, John Tees, A. L. Stadtherr, S. K. Morrison, T. W. Bath, H. L. Dalby, A. L. Grover, M. R. Walker, S. M. Sproat, B. H. Caples, A. E. Landers, H. A. Paradis, J. L. Robinson.

The following honorary members and visitors were also present at various times during the meeting: W. B. Coffey, J. D. Humber, D. K. Pischel, T. W. Huntington, J. R. Allanis, P. K. Brown, M. B. Wesson, B. C-N. O'Reilly, W. E. Stevens, J. T. Watkins, D. S. Pulford, S. H. Hurwitz, R. O. Schofield, P. W. Frame, J. P. Warren, R. R. Newall, C. C. Tiffin, E. L. Gilcreest, A. R. Kilgore, Lewis Michelson, D. W. Sooy, G. W. Pierce, Howard Fleming, H. H. Runo, G. H. Ross, T. N. Williams, C. I. Burnett, H. M. Peyser, Eugene Benjamin Travers, Mrs. S. M. Sproat, Mrs. R. H. Hawkins, Miss Ruth Ward.

NEVADA NEWS ITEMS

Dr. John W. Fuller, retiring president of the Washoe County Medical Society, entertained the members of that body at dinner at the Indart Hotel, Reno, on the evening of December 13. There were no papers read. A general discussion of birth control followed the dinner. Officers for 1928 were elected as follows: B. H. Caples, president; D. L. Shaw, vice-president; Thomas W. Bath, secretary-treasurer; S. K. Morrison, censor, all of Reno.

Dr. Fleet Harrison of Minden has removed to Colorado and has been succeeded at Minden by Dr. P. W. Robinson, formerly of Virginia City.

Dr. A. Huffaker of Carson City, one of the oldest physicians of the state, has retired from active practice and has gone to San Francisco, hoping to improve his health. Dr. L. P. Monson, formerly of the Presidio of San Francisco, and Virginia City, has taken over Doctor Huffaker's practice.

Dr. William J. Circe, for many years located at Carson City, has removed to Virginia City to engage in practice.

The Discouraging Cancer Death Rate—Dr. Frederick L. Hoffman has stated in his survey of the cancer situation that "the cancer record for 1926 is a dismal indictment of the failure of modern efforts to check the ravages of this dreadful affliction."

This statement is based on a statistical study of the mortality records of 119 American cities. While Doctor Hoffman is recognized as an expert statistician, it is fair to hope that the picture is not so appalling as the figures seem to imply, for it is probably true that the cancer propaganda has led to more careful study of sick people with better diagnostic returns and it may be that cities show a disproportionate increase because the cancer patients are sent or gravitate to the cities, to some extent at least.

Surgeons are regularly reporting more and more cured cases of cancer, and every community can furnish evidence of the beneficial results following surgical interventions. Even if the average longevity of the race has increased to the extent that a very much larger proportion of the people reach the cancer age, we may still hope that more general appreciation of the possibility of cancer in obscure cases may lead to a larger number of cures.

Although Doctor Hoffman says that "the vast amount of laboratory research on the one hand and of cancer propaganda on the other seem to have had no measurable effect on the cancer death rate" and that "the enormous sums of money which have been expended on cancer research seem to have yielded thus far not a fragment of evidence of real value toward the control and cure of the disease" it may be that the statistical evidence is to some extent unbalanced. It is probably true that until within recent years many people died of unsuspected cancer.

Even if Doctor Hoffman's gloomy statements are true, about 30 per cent of all cancers are curable in the early stages and the statistics will eventually reflect the advantages of early recognition and surgery.—*Boston M. and S. J.*

Sane Medical Charity—The Chicago Medical Society has recently taken the stand that free medical service should be rendered only to those who are recipients of other forms of charity. At last we have found a group of doctors with sense.—*Southern Medicine and Surgery.*

MISCELLANY

From time to time in this department of California and Western Medicine, appear columns grouped under the following headings: Comment on Current and Recent Articles in this Journal; News; Medical Economics; Readers' Forum; California State Board of Health; and California Board of Medical Examiners. For Book Reviews, see index on the front cover, under Miscellany.

CURRENT COMMENT

The Endorsement of Commercial Products by Physicians—In this present era of advertising and publicity, it has become a widely followed practice for the makers of all kinds of goods to advertise their wares by printing the pictures of well-known men or women together with their endorsements of the product. Thus, we are accustomed to see portrayals of dramatic critics, actors and others smoking some particular brand of cigar or cigarette and certifying that there is nothing like it. The endorsers, we understand, are not infrequently remunerated.

The propriety of this course on the part of those who furnish their endorsements, where such endorsers are members of the laity, is a matter falling within their liberty of choice, and is properly governed by their own sense of the fitness of things. When, however, non-therapeutic agents, such as, for example, cigarettes, are advertised as having the recommendation of the medical profession, the public is thereby led to believe that some real scientific inquiry has been instituted, and that the endorsement is the result of painstaking and accurate inquiry as to the merits of the product.

So then by this advertisement the general public is given the impression that there has been a real scientific inquiry as to the therapeutic effect of the cigarettes in question, and that a real scientific investigation has been made, as a result of which the conclusion has been scientifically arrived at that the cigarettes in question were "less irritating to sensitive or tender throats than any other cigarettes." It is highly improbable, to say the least, that any such scientific investigation such as doctors make in order to determine the value, let us say, of insulin or other therapeutic agents, had been made. The thinking members of the public must realize this, and those of them inclined toward a dislike or suspicion of the profession might unfortunately be led to the conclusion that professional judgment was in some instances tainted with that commercialism which would destroy its scientific value. If this is so, such conclusions would not aid in building up that confidence and respect for medical opinion to which your great profession and its individual members so richly are entitled.—Lloyd Paul Stryker. (Reprint from *New York State Journal of Medicine.*)

NEWS

Meeting of Laennec and Trudeau Societies—The Laennec Society of San Francisco, made up of a small number of physicians interested in lung disease, has invited the Trudeau Society of Los Angeles to unite with it in presenting to the profession a symposium on lung surgery on Saturday, January 28, 1928.

On Saturday morning at 9 o'clock at the San Francisco Hospital there will be a clinic at which Doctor Thearle will do the operation of thoracoplasty, and Doctor Matson will do a Jacobaeus Unverricht operation on pleural adhesions. Dr. Leo Eloesser will either do an operation on a case of bronchiectasis or illustrate the operation and show a number of cases.

On Saturday afternoon at 2 o'clock in the rooms of the San Francisco County Medical Society a literary program will be presented, consisting of papers by the invited guests with lantern slide exhibition, and papers also by leading surgeons who have done considerable work in this field, including Dr. Harold Brunn of the University of California Medical School on lobectomy for the treatment of bronchiectasis; Dr. Leo Eloesser, professor of clinical surgery, Stanford University Medical School on partial thoracoplasty; and Dr. Emile Holman of Stanford University Medical School on experimental production of tuberculous abscesses of the lung.

It is probable that Dr. Edward Archibald of Montreal who is to address the Academy of Medicine on the night of January 28 will give some clinics and participate in the afternoon meeting at the San Francisco County Medical Society rooms.

Full announcement of the program is appended. The medical profession is invited to attend the morning operations and the afternoon session.

* * *

Laennec Society's Symposium on Lung Surgery—Saturday morning, 9 a. m., San Francisco Hospital, January 28, 1928. Main surgical amphitheater:

Thoracoplasty—Dr. William A. Thearle, Major Medical Corps, U. S. A. (retired), and formerly surgeon at Fitzsimmons Hospital.

Jacobaeus Unverricht operation on pleural adhesions—Dr. Ralph A. Matson.

Bronchiectasis operation and case reports—Dr. Leo Eloesser.

Saturday afternoon—Rooms of San Francisco County Medical Society, Laguna and Washington streets:

Surgical operations for the relief of lung tuberculosis by compression—Dr. William H. Thearle, Denver, Colorado.

The Jacobaeus Unverricht operation for removal of pleural adhesions which prevent successful lung collapse—or something on his dissections of the phrenic nerve—Dr. Ralph A. Matson, Portland Oregon. Discussion by Dr. Edward Archibald, Montreal, Canada, guest of the Academy of Medicine.

Lobectomy for the treatment of bronchiectasis—Dr. Harold Brunn, professor of surgery, University of California Medical School.

Partial thoracoplasty for pulmonary tuberculosis—Dr. Leo Eloesser, professor of clinical surgery, Stanford University.

The surgery of lung abscess—Dr. Emile Holman, professor of surgery, Stanford Medical School.

Saturday evening:

Academy dinner.

Thoracoplasty—Dr. Edward Archibald. Discussion by invitation: Major William A. Thearle, Denver, Colorado; Dr. Matson, Portland, Oregon.

How to Secure Treatment for a Needy Crippled Child—Under a new law passed at the last session of the legislature, provision is made for the treatment of crippled children. In order to make the essential details relative to the working of the law readily available the following questions and answers are published here:

Q. For whom is the Crippled Child Act designed to provide treatment?

A. Needy physically defective or handicapped persons under 18 years of age, residents of California, who should have necessary surgical, medical, hospital, physiotherapy, occupational therapy, or other service, special treatment, materials, or appliances for use in relieving their defective or handicapped condition.

Q. Is treatment provided for all handicapped individuals?

A. No. Only for those whose parents or guardians

are unable to furnish such treatment, either in whole or in part.

Q. What is the necessary procedure for obtaining treatment?

A. The parents or guardian may petition the superior court of the county wherein they are residents for a certificate setting forth the facts, and if the judge is satisfied that the parents or guardian are unable to furnish treatment and appliances, either in whole or in part, he shall issue a certificate to that effect.

Q. What shall the parents or guardians do with such certificate, having obtained it?

A. They shall present it to the State Department of Public Health, whose duty it is to furnish the necessary services, materials or appliances, their upkeep and transportation, the expenses incidental to which are advanced by the department from a revolving fund appropriated for that purpose.

Q. Does this mean that treatment is provided at the expense of the state?

A. No. All money expended under the authority of the certificate constitutes a legal county charge against the county from which the certificate is issued.

Q. What provision is made for the handling of such expense claims by the county?

A. The director of the State Department of Public Health shall present a claim for expenses of the necessary treatment, services, appliances and their upkeep and transportation, to the board of supervisors of the county in which the certificate is issued, whereupon the supervisors shall audit and approve said claim and the county auditor shall issue a warrant for the amount thereof payable to the State Department of Public Health, and the county treasurer shall pay the same.

Q. Where is the treatment of such physically handicapped persons given?

A. In hospitals or institutions with which the State Department of Public Health may contract to provide service and equipment or by individuals, agencies or organizations approved and designated by the department.

Q. When and where may a crippled child be examined and diagnosis made?

A. At diagnostic clinics held in the county at some central place designated by the State Department of Public Health.

Q. How may parents or guardians learn where these diagnostic clinics are located?

A. By making inquiry of county health officers, public health nurses, and local physicians.

Q. Does the State Department of Public Health exercise supervision over handicapped persons under treatment?

A. Yes. Through its employees and the agencies with which it may cooperate it maintains a strict supervision over such cases under its care, visiting them when advisable, causing a record to be kept showing their condition and improvement.

Q. Are parents or guardians who are able expected to contribute in part for treatment, appliances, their upkeep and transportation?

A. Yes. The State Department of Public Health may enter into agreements with them to pay such amounts as they may be able toward the cost of service, equipment, etc.

Q. May the State Department of Public Health receive gifts, legacies and bequests to expend for the purposes outlined in the act?

A. Yes, provided that no part of such funds be used for administrative expenses.

Q. May county boards of supervisors levy a special tax to provide funds for carrying out the purposes of the act?

A. Yes. They may levy a special tax not to exceed the sum of three mills on each dollar on the assessed valuation of the taxable property in the county.

Q. Are the counties in California authorized to provide treatment independently for needy physically defective or handicapped persons?

A. Yes, or they may cooperate with the State Department of Public Health as already outlined. If acting independently, parents or guardians must consent in writing to the provisions of care and treatment.

The San Diego Academy of Medicine—The San Diego Academy of Medicine will hold its annual series of lectures during the week beginning January 23, 1928.

The guest will be Dr. Allen Krause of Johns Hopkins University, Baltimore, Maryland.

Doctor Krause is a very notable figure in the field of tuberculosis, holding the following titles: Associate Professor of Medicine, Johns Hopkins; Lecturer at the Trudeau School of Tuberculosis; Director of the Kenneth-Dows Tuberculosis Research Laboratories of Johns Hopkins Hospital; and Editor of American Review of Tuberculosis.

The San Diego Academy of Medicine extends an invitation to all physicians who are interested to attend these lectures.

Preservation of Darwin Home—We learn with pleasure that Charles Darwin's house, where he did most of his epoch-making work, has been purchased and presented to the nation. This was the fruit of an appeal by Sir Arthur Keith in his presidential address to the British Association. On reading the appeal Mr. George Buckston Browne, a retired genito-urinary surgeon, at once telegraphed Sir Arthur his desire to make himself responsible for the entire gift, his motive being to allow future generations to see Darwin's home, which, with its estate might otherwise pass into the hands of builders. The cost of the house, which is at Downe, in Kent, with some endowment fund, amounts to between $60,000 and $70,000. —*Canad. M. A. J.*

California Physicians to Report Children Having Impaired Hearing—Senate Bill No. 342, Chapter 660, was a bill approved by Governor Young on May 20, 1927. The bill has to do with a notification by physicians, nurses, parents or guardians of minors who are totally or partially deaf.

Reports are to be made to the superintendents of schools in counties and cities in which such children are residents. It is possible that this bill may be discussed in more detail in a subsequent issue. In the meantime, the attention of members of the California Medical Association is called to its general provisions. —Department of Public Health.

The American Board of Otolaryngology—An examination was held in Detroit on September 12, during the session of the American Academy of Ophthalmology and Otolaryngology. One hundred and two applicants appeared for examination, with .107 per cent failures.

An examination was held in Memphis on November 14, preceding the session of the Southern Medical Association, with .127 per cent failures.

In the course of the past year 369 applicants have been examined.

In 1928 examinations will be held in Minneapolis on June 11 at the session of the American Medical Association, and in St. Louis, on October 15 during the meeting of the American Academy of Ophthalmology and Otolaryngology.

Prospective applicants for certificates should address the secretary, Dr. W. P. Wherry, 1500 Medical Arts Building, Omaha, for proper application blanks.

American College of Physical Therapy and International League Against Epilepsy as Well as the American Psychiatric Association to Visit European Medical Centers—A splendid opportunity to enlarge our knowledge of special branches of the profession is offered by visits to the European centers which have been arranged by the American College of Physical Therapy and the International League against Epilepsy.

The purpose of these visits is to obtain by personal contact a comprehensive idea of what is taking place across the water, and these societies cordially extend

to the entire medical profession an invitation to participate.

Perhaps the largest party to go abroad will be the American College of Physical Therapy. This group will sail from New York on May 26, 1928. The epileptologists and psychiatrists will precede them, sailing on March 17.

While in Europe psychiatrists will visit several of the leading clinics, including the famous "Bethel Colony of Epileptics," in Bielefeld, Germany. At various stages of their journey clinical discussions will be held. At these meetings leading specialists in psychiatry will address them.

The high point of the physical therapy tour will be the visit to Professor Rollier's famous hospital in Leysin, Switzerland. This is the most famous clinic of its kind in the world, and where Doctor Rollier conducted his first experiments with heliotherapy.

Alvarenga Prize of the College of Physicians of Philadelphia—The College of Physicians of Philadelphia announces that the next award of the Alvarenga prize, being the income for one year of the bequest of the late Señor Alvarenga, and amounting to about $300, will be made on July 14, 1928, provided an essay deemed by the committee of award to be worthy of the prize shall have been offered.

Essays intended for competition may be upon any subject in medicine, but cannot have been published. The essay should represent an addition to the knowledge and understanding of the subject based either upon original or literary research. They must be typewritten, and in English, acceptable for publication without necessity for editing by the committee. Any illustrations should be appropriate and correctly annotated with the text. Essays must be received by the secretary of the college on or before May 1, 1928.

Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within the name and address of the author.

It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

The Alvarenga prize for 1927 has been awarded to Dr. Emil Bogen, Cincinnati, Ohio, for his essay entitled, "Drunkenness."—*Boston M. and S. J.*

University of California Medical School—Centralization of all departments of the University of California Medical School on Parnassus Heights in San Francisco will be effected as soon as space for them there becomes available, President W. W. Campbell announced yesterday.

President Campbell made the announcement after the Board of Regents of the university had endorsed his recommendation for unification of the medical school.

The plan, he said, grew from conferences he had held with Dr. Langley Porter, new dean of the medical school.

"This means," said Doctor Campbell's announcement, "that those medical school activities now conducted within a few departments on the Berkeley campus, such as pharmacology, biochemistry, bacteriology, and so forth, will be transferred to San Francisco soon."

University medical students now are required to attend classes both in San Francisco and in Berkeley because the few departments in question have been retained on the Berkeley campus.—*S. F. Examiner.*

The University of California Extension Division Announces Classes in the Bay Region, Beginning in January and February:

SAN FRANCISCO

Unusual and Difficult Children—Dr. V. H. Podstata. Thursday, January 19, 7 p. m., room 104.

Health Education—Dr. Richard A. Bolt. Tuesday, January 24, 7 p. m., room 204.

Psychology—Dr. Ethel Sabin-Smith. Friday, February 10, 7:30 p. m., room 202.

Abnormal Psychology—Dr. D. A. MacFarlane. Tuesday, January 17, 7 p. m., room 103.

Heredity and Evolution of Man—Prof. S. F. Light. Friday, January 27, 7:30 p. m., room 206.

Various courses in Education, Recent Discoveries in Science, Parliamentary Procedure, Art and Economics, will be offered. Classes are held in the new Extension Building, 540 Powell Street.

OAKLAND

Introduction to Psychology—Dr. D. A. MacFarlane. Wednesday, January 18, 7 p. m., room 304.

Practical Speech Making—Prof. Dwight E. Watkins. Monday, January 16, 8 p. m., room 304.

Current Events—Prof. Raymond G. Gettell. Tuesday, January 17, 7 p. m., room 101, Hotel Oakland.

Various courses in Education, Languages, Economics, etc., will be offered. Classes meet at Extension Center, 1512 Franklin Street, unless otherwise noted.

BERKELEY

Physiology of the Eye—Mr. Ora L. Huddleston. Wednesday, January 18, 8 p. m.

Elements of Expression—Miss Annie H. Allen. Thursday, January 19, 7:30 p. m., 123 Wheeler Hall. Various other courses.

Register at the offices: 540 Powell Street, San Francisco; 1512 Franklin Street, Oakland; 301 California Hall, Berkeley.

Infantile Paralysis Fund Given to University of California—Through the efforts of fifty residents of San Francisco and a number of other California cities, a fund of $7231 has just been raised for the purpose of establishing a bureau for the collection and distribution of infantile paralysis serum at the University of California, according to an announcement of the Board of Regents at their regular meeting recently.

This fund has been created at the request of Dr. Karl Meyer, director of the University Hooper Foundation for Medical Research, it is stated, and its rapid accumulation is a result of hearty support by a group of business men and by the newspapers. Doctor Meyer asserts that the cooperation of the papers was extremely helpful.

The object of the bureau, it is explained, is to provide a central distributing center and emergency stock of serum for infantile paralysis, made from the blood of convalescent patients. This convalescent serum, experience has shown, is the only reliable method of combating the disease, and, if given early in its development, will either decrease its severity or prevent its further development.

Previous attempts to create such a bureau have failed through lack of funds to send out physicians in search of blood to be used in the manufacture of the serum. If a regular yearly endowment can be assured, the bureau will continue to function as a preventorium for future epidemics such as that which ravaged the state several years ago.

Lane Medical Lectures—The following popular medical lectures have been arranged to be delivered on alternate Friday evenings during January, February, and March, 1928:

January 13—"Psychoanalysis," Dr. James L. Whitney.

January 27—"Infantile Paralysis," Dr. Russell V. Lee.

February 10—"Cults, Quacks and Cures," Dr. Edgar L. Gilcreest.

February 24—"Chinese Medicine," Dr. Emmet Rixford.

March 9—"Protection Against Tuberculosis," Dr. Frederick Eberson.

March 23—"Prevention of Heart Disease," Dr. William Dock.

This is the forty-sixth series of popular medical lectures given by our institution.

READERS' FORUM

Medical Arts Building, Redlands.

Dear Doctor:

It seems to me it would be wise to call the attention of the doctors, through the columns of the state journal, to the fact that an attempt is being made through a number of channels to use their opinion for advertising purposes.

According to the matter advertising a popular cigarette, over eleven thousand physicians in the United States sent in answers to a questionnaire sent out by a firm of advertisers. All the doctors got out of it was a sample package of cigarettes.

While of course these advertisers do not use the names of the individual physicians, yet they do take the number of replies and their attitude and set forth these replies as the opinion of the medical profession.

I am enclosing a copy of the latest attempt to exploit the doctor for advertising purposes that has come to my notice. The attitude of the Los Angeles Times toward scientific medicine is well known. I think The Journal of the American Medical Association should sound a warning with reference to this matter, as no doubt as time goes on the doctors will be flooded with requests for approval of every kind of food product and probably many other articles where their approval would be of help to the salesman.

Sincerely yours,
(Signed) GAYLE G. MOSELEY.

* * *

Dr. G. G. Moseley, November 23, 1927.
123 Cajon,
Redlands, Calif.

Dear Doctor Moseley:

We are making a survey among prominent physicians of southern California as to the value of meat (lamb) as a food. We are particularly desirous of obtaining an impartial expression from the physicians as to the benefit or detriment involved in the use of meat (lamb) in the diet of the normal person in average good health.

The Times will regard all replies to the enclosed questionnaire as confidential insofar as any publication of names is concerned. The questionnaire may be returned, in fact, unsigned if you prefer.

We are very much interested in procuring answers to the enclosed questions and will be highly appreciative of your cooperation in this respect.

Very truly yours.
THE TIMES-MIRROR CO.
WALTER G. PFAFFENBERGER.

* * *

PLEASE CHECK ANSWERS AND MAIL THIS CARD TO THE TIMES

Purely in the interests of a better understanding of food values, will you kindly, as a representative member of the medical profession, answer the following questions? Your name will not be used in any way, in fact, you need not sign your name if you prefer not to do so. This questionnaire is intended merely to procure an unbiased, authoritative opinion from reputable physicians on the following questions:

1. Do you regard the use of meat in the diet of the normal person in average good health as beneficial?
YES ☐
NO ☐

2. Do you regard prime lamb, generally speaking, as a healthful food?
YES ☐
NO ☐

3. Are you in sympathy with the views of the so-called health authorities who are propagandists for a meatless diet as a "cure-all" remedy for human ills?
YES ☐
NO ☐

Please check and mail today. Thank you.

TWENTY-FIVE YEARS AGO *

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Volume 1, No. 3, January, 1903

From an editorial entitled "Covert Attack on Medical Law":

. . . The journal knows perfectly well that no committee has been appointed from the Medical Society of the State of California looking to any addition to or modification of the present law, for the society and those it represents are, so far, thoroughly satisfied with this law and the way its provisions have been administered. The society believes, on excellent grounds, that this law is forcing a better preparation on the part of those who wish to practice medicine in California, and that it will, in not many years, elevate the standard of medical practitioners all over the state. . . .

From an article entitled "Word 'Patent' a Misnomer":

. . . As commonly applied to medicines, the word "patent" is almost invariably a misnomer. . . .

. . . The only apparent remedy for these serious evils seems to be lying dormant in the hands of the medical profession. A carefully selected and properly qualified board of experts, backed by an organized and united medical profession, and given authority to demand in the name of the whole profession that recognized standards of strength, purity and formula be adopted and followed by all manufacturers and dispensers of the various materials used in the practice of medicine, would speedily effect a very decided reform and would bring at least partial order out of the present absolute chaos. . . .

From an editorial entitled "State Society April Meeting":

. . . The next meeting of the State Society promises to be the best attended and one of the most successful meetings we have ever held. It will be the first meeting under the plan of reorganization, and as the changes—particularly in the way of transacting business—are many and radical, it will be looked forward to with much interest. All the business of the society will be transacted by the delegates elected by the affiliated County Medical Societies; it is vitally important, therefore, for these county societies to see to it that their delegates are duly elected in ample time for the secretary to prepare his lists. . . .

From an editorial entitled "Membership in A. M. A. Defined":

. . . The A. M. A. recognizes but one channel to membership in its body: through the State Society; and as the State Society in turn recognizes only the one affiliated County Society in each county of the state, it is obvious that to hold membership in, or to join the American Medical Association, membership in the affiliated County Society is obligatory. . . .

. . . Don't wait to think about it for a few years, nor to see what someone else is going to do, but see that you are a member of the State Society before April, 1903, overtakes you.

From an editorial entitled "Pure Food Bill in Congress":

. . . Organization of the professional men of this country means more than the vast majority of physicians dream; it means proper and adequate legislation, both state and federal, in the matter of qualifications for medical practice; suitable sanitary and quarantine measures; the control and enforced pro-

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

duction of pure drugs, pure pharmaceuticals of pharmacopeial standard, pure foods or foods so labeled as not to deceive the purchaser, and most of all would mean, in a little time, a proper control of the deadly "nostrums," "tonics," "bitters," and "cures." The duty of organization is not alone to ourselves, but to the people of the whole country—it is not selfish, it is humanitarian. . . .

From an editorial entitled "The Journal Advertisers":

. . . This journal, being the official publication of the Medical Society of the State of California, will see to it that, so far as it may be humanly possible, both the members of the society and the advertisers of the journal are protected; the former from appeals to make use of unethical preparations, and the latter from the injury which comes from corrupt association. The journal will endeavor to publish advertisements only of honest and reliable firms. In the case of remedial agents or preparations the exact quantity of the active ingredients must be known or published, and no obviously extravagant claims for impossible therapeutic value will be permitted. Anyone who is induced to purchase something advertised in the pages of the journal, and who finds that the article is not what it was therein represented to be, will confer a favor upon the publication committee and the editor by promptly reporting all the facts. . . .

From the reply of Philip Mills Jones, M. D., editor, to a letter in the Correspondence Column by J. M. Hurley, M. D., of San Bernardino:

. . . The first point raised in the foregoing letter is made under a misapprehension of the facts. The Medical Society of the State of California is "composed largely of doctors of San Francisco and bay counties around San Francisco," but only because there are more members of the profession residing in that than in any other section of the state. . . .

. . . It sometimes happens that papers sent in through the committee on program are declined, and for various reasons. . . .

. . . If the medical profession of the State of California is ever to be united, that desirable end will not be brought about by sectional strife nor by jealousy of the attainments of the eminent men in the profession. The aim of the State Society is to unite the county societies in a harmonious whole, not to disrupt. . . .

From an "In Memoriam" article on Walter Reed:

Dr. Walter Reed, A.M., LL.D., born September 13, 1851; died November 23, 1902. A memorial meeting held in Washington, D. C., December 31, 1902. Reported by Philip Mills Jones. . . .

. . . This point was brought up by Doctor King to show how little the people, even scientific men, knew of the exceedingly valuable work that this quiet, modest, unassuming scientist had achieved. . . .

". . . He came to Cuba at a time when we had done everything that could be done to clean Havana, yet yellow fever was still epidemic. As a result of his work that terrible scourge was absolutely abolished. Later, in a month when ordinarily yellow fever had been worst, he checked the disease and drove it from Havana. That was the first time in two hundred years that Havana had been free from the disease." Professor William H. Welch closed the meeting with an address upon Doctor Reed as a scientist and a benefactor to humanity. . . .

From a program committee announcement:

. . . Stanford University, November 19, 1902.

Dr. F. B. Carpenter, San Francisco:

Dear Sir: If I can possibly get away I shall be glad to attend the meeting of the Medical Society at Santa Barbara, in which case I shall be pleased to speak on "The Preparation for the Study of Medicine."

Very truly yours,

David S. Jordan. . . .

From an item by Philip Mills Jones, editor:

. . . And now it is announced unto us that one has come with a microscope and sundry thin glasses and small bottles of curious colors, and, after certain long study and strange manipulations has shown a thing called a germ, which is the germ of laziness. That certainly is good and excellent work, for now we may look for another to come, and after the expenditure of much time and gray matter, provide the world with a "lazinessitic" serum; and then the American people will rush about more wildly than ever.

From an article on "Medical Legislation in California" by William C. Tait, LL.B.:

. . . As the constitutionality of the Medical Act of 1901 has been attacked in the Superior Court, a certain uneasiness has made itself felt concerning the fate of the law among the better element of the medical profession. This is quite natural when we consider that the overthrow of this particular statute will not revive any prior medical act, as all prior legislation has been expressly repealed, but will mean the entire absence of any regulation of the practice of medicine; and, therefore, the abandonment of the people of California to the very evils which, by the statute, they desired to escape. . . .

From an article by Alden M. Gardner, M. D., on "California State Hospital Care and Treatment of the Acute and Convalescing Insane":

. . . One of the early things I learned after commencing state hospital work was that the public owned and supported the state hospitals and knew but precious little about them and their management. . . .

From an article by F. M. Pottenger, Ph. M., M. D., "Is Another Chapter in Public Phthisiophobia About to be Written?":

. . . That there is danger from tuberculosis no one will deny; but that the general public is becoming needlessly alarmed, and is magnifying the danger of infection, is likewise undeniable. The trouble with the people is that they are going at the matter blindly. They are not stopping to find where the danger lies. It is the privilege and duty of the medical profession to instruct the people that they may know how to protect themselves, and also that they may not work unnecessary hardships upon those afflicted with tuberculosis. . . .

From an article by Walter Lindley, M. D., on "Oophorectomy—Its Effect on the Mind and Nervous System":

. . . The object of this brief paper is simply to call out information on three points.

First, what effect has oophorectomy on epilepsy? Second, what effect has oophorectomy on insanity? Third, what effect has oophorectomy on a patient who has no apparent disease of the mind or nervous system? . . .

From an article by John C. Spencer, A. B., M. D., on "The Prophylaxis of Venereal Disease":

. . . My conviction is that the most effective methods for combating the undesirable features, and improving those already working fairly well—for no perfect system, in part or as a whole, may be said to have been evolved as yet—will be found in heightening the standards of education as to the prophylaxis of venereal disease, and providing ample facilities for throttling the sources of infection through proper treatment. . . .

From the discussion on Doctor Spencer's paper:

. . . Dr. George Chismore, San Francisco: . . . I

fully agree with Doctor Spencer in contending that it is the duty of all physicians to consider this subject and strive to aid progress, but in our present knowledge, when a doctor has fairly warned his client of his danger, to me, he seems to have done all that is practicable. . . .

. . . Doctor Krotoszyner of San Francisco: . . . There ought to be a course of public lectures given annually to the educated laity at large—lectures that deal with the most pertinent points as regards the pathology and prophylaxis of venereal diseases. . . .

. . . Dr. D. W. Montgomery of San Francisco: . . . The control of venereal diseases by law is, I think, hopeless. In the diseases gonorrhea, syphilis and chanchroids we have affections that allow the patients to pursue their vocations without, as a rule, giving any outward signs of their trouble; their physicians in whom they confide are in honor bound not to denounce them. . . .

Doctor Spencer: . . . I agree with Doctors Chismore, Krotoszyner and Montgomery in regard to regulation by law. It must be more in the manner of moral influence and teaching. . . .

From the proceedings of medical societies:

. . . At the last regular meeting of the Academy of Medicine the election of officers resulted in the re-election of the officers who served last year, namely: Dr. D. W. Montgomery, president; Dr. Dudley Tait, vice-president; Dr. Louis Kengla, secretary; Dr. Henry Kreutzmann, treasurer. The committees will be announced later by the president. . . .

. . . The first regular meeting of the year of the Los Angeles County Medical Association was held January 2, 1903. The retiring president, Dr. J. H. Utley, delivered an address on Louis Pasteur. . . .

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. Pinkham, M. D.
Secretary of the Board

According to information, Fred J. Barnet, M. D., is now serving a jail sentence in Los Angeles on three separate charges of sixty days each for the illegal possession and sale of liquor. A citation has been issued calling Doctor Barnet before the board at the February 1928 meeting to show cause why his license should not be revoked.

According to the Oakland *Times* of November 4, 1927, complaint has been filed charging the Sing Herb Company, 491 Tenth Street, and the Fong Wan Company, 576 Tenth Street, Oakland, with violation of the medical practice act, it being related "Fong Wan, known as 'Dr.' Fong Wan, came into the limelight of official investigation several years ago when he charged that two state officials and one city employee solicited $10,000 from him, promising that they could prevent passage of the Chinese herb bill which was then before the legislature for action." Fong Wan some time ago is reported to have brought suit against H. G. Henderson, special agent of the Board of Medical Examiners, in connection with our investigation of Fong Wan's alleged violation of the medical practice act.

It is related that Chan & Kong, 901 Clay Street, Oakland, were recently investigated in connection with a charge of violation of the medical practice act. Our investigator reported that Chan Kong related: "In the right hand you could find out about your heart, liver, and kidneys; with the left hand your heart, lung, and kidneys."

According to a report from our Special Agent Carter, Cora L. Compton, Chirothesian practitioner, was on December 1 found guilty of violation of the medical practice act and paid a fine of $100, an additional sixty-day jail sentence being suspended for one year on condition that there be no further violation of the law by this defendant. It is related that Chirothesian practitioners' or healers' certificates are obtained ostensibly by passing some sort of an examination, but the principal thing required, as far as we are able to ascertain, is the payment of about $200 and annual payments thereafter. It is related that W. Grant Hess, the so-called "bishop" of the Chirothesian Church of Faith, testified two or three years ago in the Superior Court of Los Angeles County in the case of People vs. Larkin to the effect that under the tenets and authority of the church their practitioners could use all natural means, indicating that in some instances medicine might be considered natural means.

A new institution, named the College of Enerology, has recently come to our attention, located in San Diego and reported sponsored by Nelson C. Oakley, D. C., of the Clewell College of Chiropractic; A. McKay Jordan, and Charles Rosedale, M. D., the advertisement relating that the institution will confer various degrees. "Instructors and equipment are first class. . . . You must by this time have absorbed sufficient knowledge of the purposes of the First National Health League, to catch, in a measure, the vision of its founders. With San Diego the hub, and the United States its rim, you are able to see the strength and radius of the wheel. Every individual is a prospect; every health seeker a candidate; every health center a nucleus, and every man, woman and child a part in the 'turn' of the wheel." Our investigator relates: "This is evidently another scheme to give an excuse to unlicensed individuals for the use of the prefix 'Dr.' and the word 'doctor' by conferring on them the degree of 'Doctor of Enerology.'"

The San Francisco *Examiner* of November 10, 1927, relates that Mrs. Ernestine Engelhardt (nee Gollas) on November 9 paid a fine of $100 in the police court of Oakland on a charge of violation of the medical practice act. For some time she has conducted a so-called cancer institute in Oakland and published a pamphlet entitled "Cancer Cure." Our special agent relates: "Some of the highlights of her publications are the manufacture of incluvin, made from chicken gizzards; the Bellflower apple tree touched by a woman having a cancer, which broke out in sores; and the statement that all human ills, including cancer, can be cured with a half an ounce of tincture of iron in a quart of glycerin applied locally and taken internaliy, and Blaud's Pills." Investigation discloses that in 1926 she was declared mentally incompetent in the Superior Court of San Francisco, and we are assured that she will not further violate the law.

Our attention has recently been called to the "International School of Professional Arts and Sciences" with headquarters at 860 Geary Street, San Francisco, a recent circular stating that "an expert faculty of not less than eight in number, among them former staff members of the world's most famous institutes, will instruct the class." However, no physical evidence of this institution can be found. The articles of incorporation relate among the purposes, the teaching of medicine, surgery, dentistry, optometry, chiropody, the granting of diplomas, degrees, etc. It is a question whether this institution comes under the provisions of Chapter 152, Statutes of 1927, known as the "college incorporation bill" which was designed

to control the easy incorporation of institutions empowered to grant degrees.

Reports relate that on November 18 Lenore Johnston, in the municipal court of Long Beach, was sentenced to pay a fine of $100, suspended on condition that the defendant does not violate the state medical practice act for two years.

Our special agent recently quoted from a letter from San Diego relating: "Several doctors locally have reported to me a rather slick individual using the name of Arthur B. Kent. He asks for morphin enough to carry him to Oakland. He states he has had cancer of the bowel or has ulcerations, and is on the way to Oakland for operation. He carries a letter from Sheriff Treager recommending him to the good graces of any doctor, together with a deputy sheriff's badge. He also has a letter from a Doctor Rubinstein of Oakland requesting doctors to supply the necessary dope. He has been working this gag since October 22." Investigation discloses that Kent was at one time a deputy sheriff in Los Angeles County, but resigned last June, it being related that the letter purported to have been written by Sheriff Traeger was in fact written by Kent, who was at one time secretary to the under sheriff. The licensed physicians of this state are warned against any such procedure as here outlined.

Special Agent Carter recently had occasion to investigate the advertisement in a Los Angeles paper reading: "Cancers 90 per cent successfully treated—R. M. Pyle, 3529 N. Broadway." He related that this was the address of R. W. Levy, a dentist, and Douglas W. MacMillan, M. D., Mr. Pyle not being there. It was related that he was in Bakersfield and did not come to Los Angeles, but that Doctor MacMillan was handling the business, and that despite the advertisement reading "90 per cent successfully treated," he had only noted success in one case and was not sure that it was cancer. Such advertising appears to violate the eighth subdivision of Section 14, smacking of false and misleading advertising.

The Fresno *Bee* of November 16, 1927, relates that a continuance has been granted Dr. G. Carl H. McPheeters, now awaiting trial on a grand jury indictment for sending obscene matter through the mails.

Assistant Special Agent Davidson relates a recent investigation of the Sing Herb Company, 491 Tenth Street, Oakland. It is related that an investigator was admitted to an office where a pulse examination was taken by a supposed non-English-speaking Chinaman, named Suen Hing Wan, the interpreter being an Americanized Chinaman by the name of Chan Git, alias Thomas Chan. Our investigator reported that upon his arrival with a search warrant he asked Chan Git for the doctor and was informed they had no doctor, that they were herb merchants. Upon asking the investigator which Chinese made the examination and represented himself as being a doctor, he pointed out the elderly Chinese, Suen Hing Wan. Git spoke up and said that the other Chinaman did not speak English. When one of the United States immigration inspectors with our investigator asked the Chinaman in English when he came to this country, he received the reply, also in English, "in 1913." Upon asking him for his "Gi Mi," which is their passport and photograph, he told the inspectors that it was in San Francisco. When asked who was the Chinese woman who was present he stated that it was his wife, all of this conversation being in the English language. This shows that the purpose of using an interpreter was more or less of a fraud, as it is in probably all of their cases. This procedure is a new method of investigating the alleged violation of the so-called Chinese herbalists who heretofore have escaped punishment by claiming a lack of knowledge of the English language, necessitating the use of an interpreter, but this claim was exploded by the conversation above related, and the result of the trial in the Oakland courts is awaited.

The "University of Natural Healing" is reported as a title assumed for business purposes by S. I. Kimbro, Los Angeles, who has run foul of the law in connection with his alleged violation of the medical practice act. At present he is reported to call his business the "Kimbro Health Institute."

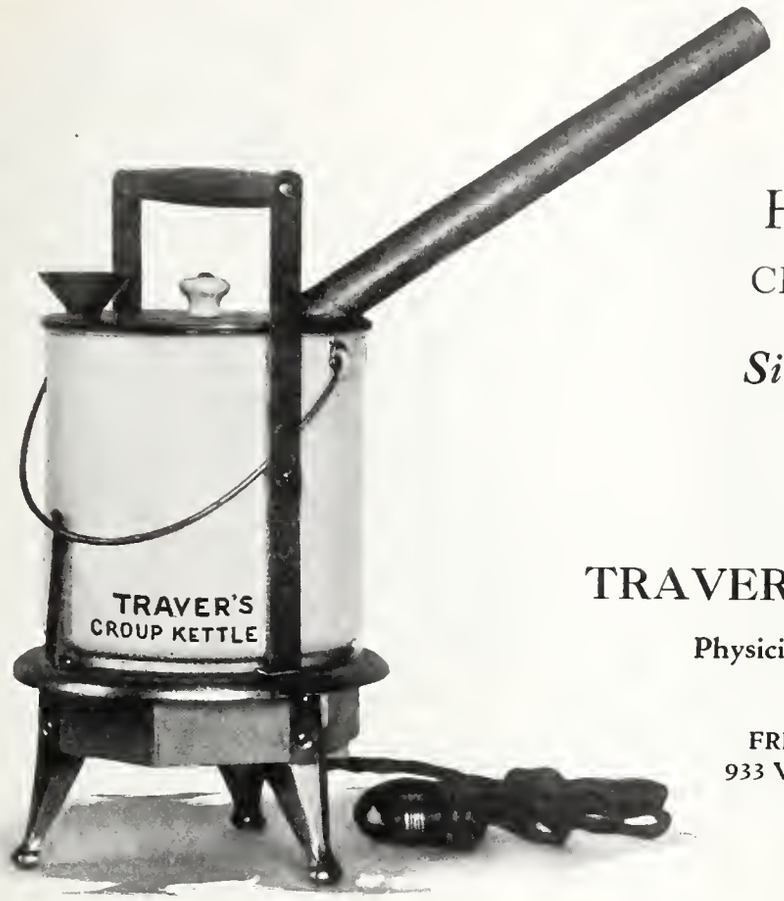
San Francisco, November 30.—Plans of Dr. H. Spencer Lewis, national president of the Rosicrucian order, and philosophical cult, who yesterday announced a project for establishing a colony in Egypt, faced opposition at a point much nearer home. . . . Doctor Lewis said his plans provided for the sailing of five thousand American men, women, and children next year to Tel-El-Alarna, a city by the Nile in central Egypt, founded by Amenhotep IV, who reigned in Egypt about 1466 B. C. Doctor Lewis stated that his colonists would abandon modern dress, assume the costumes of the ancient Egyptians and live in accordance with the principles propounded by Amenhotep in an effort to prove that these laws have not lost their value for the human race.—*Sacramento Bee,* November 30, 1927.

The article further relates that the national headquarters of the Rosicrucians would be moved from Tampa, Florida, to San Jose, and that a fifty-watt radio station would be established at Rosicrucian Park which brought sharp protest from San Jose residents.

Dr. Robert H. Sallfield, arrested Thursday by the San Francisco police on an Oakland warrant, had a running mate in James Forester Peck, Jr., former East Bay broker, the police report, following a more thorough investigation of their alleged fictitious check operations (Oakland *Tribune,* November 19, 1927). The records of the Boards of Medical, Osteopathic, and Chiropractic Examiners do not show the name Robert H. Sallfield.

A press dispatch dated Fresno, November 30, 1927, printed in the San Francisco *Examiner* of December 1, 1927, relates that "Dr. Henry C. Wallace, negro physician, today entered a plea of guilty in the United States District Court to a grand jury indictment charging him with violation of the Harrison Narcotic Act and was sentenced to five years' probation by Judge William B. James."

In line with his recently instigated campaign of sending to jail persons arrested for driving automobiles while under the influence of intoxicants, Municipal Judge Wilson yesterday imposed a straight sentence of thirty days upon Dr. C. B. Wiley, 52 years of age, charged with being drunk. . . . Doctor Wiley, who gave his address as 319 West Ninety-first Street, pleaded not guilty to the drunk charge when taken into court two days later. Yesterday he came before Judge Wilson and changed his plea to guilty and requested immediate sentence.—*Los Angeles Times,* November 16, 1927.



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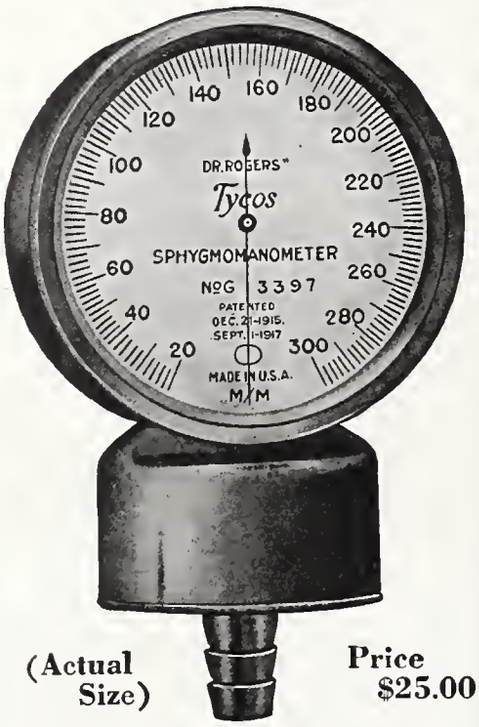

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American Association for Medical Progress—The second annual report of the Santa Barbara County branch of the American Association for Medical Progress, organized in 1925, has been recently issued by its president, George E. Coleman. Henry S. Pritchett of the Carnegie Foundation is its honorary president, while Honorable Charles Evans Hughes is the honorary president of the parent association in New York City.

The activities of the association for the year are reviewed. Two lectures were given by Mr. Coleman on biology and medical progress, and lantern projections of bacteria and body cells were shown and explained.

Nine reprints of his published articles were sent to members among which were "Education of the Public in Elementary Medical Science" and "Some Medical Aspects of Deafness—A Discussion for Laymen," which was distributed by the association throughout the state during Hard-of-Hearing Week.

Letters to members urging smallpox vaccination, diphtheria immunization, and on other topics of importance were also sent, usually about once a month, to teachers and to members of Parent-Teacher Associations and Child Study Clubs.

In order to stimulate a wider knowledge of the methods of preventing diphtheria, prizes of $50 and $25 were offered to parents for the best essays on this subject.

Concerning antievolution legislation and its effect upon medical teaching the report is quoted as follows:

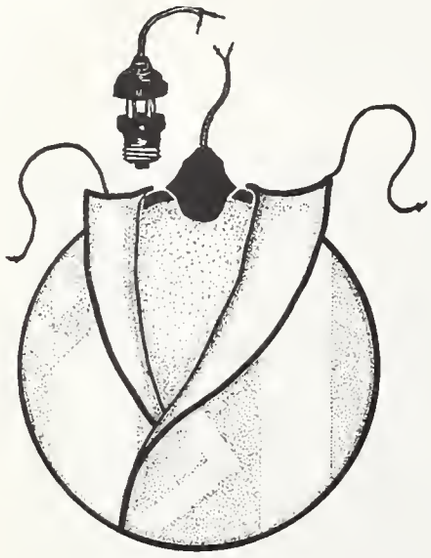
"The antiscientific activities of the fundamentalists may not appear to have a bearing upon medical teaching, but in the opinion of those most competent to judge, the passage of the bill proposed at the last session of the California legislature would of necessity have had a very adverse influence upon the preparatory education of future medical students as well as upon their later medical studies.

"Biological research cannot be conducted intelligently without an open mind, and one of our objects is to further such research. It was therefore deemed advisable to add our protest to those of many other local and state organizations against the passage of this bill, which fortunately was killed in committee. Association with the Science League of America as its secretary-treasurer has made me familiar with the avowed intention of the sponsors of this bill to stifle freedom in the teaching of the biological sciences throughout the country. Medical progress could be measurably retarded by the success of the fundamentalist movement just as the control of our state by the antiscientific opponents of vaccination has given California its unenviable reputation as an endemic focus of smallpox."

References to the work of the local branch have appeared in medical journals, and Santa Barbara newspapers have published upward of sixty columns of articles and comments during the year.

Under the caption of "Outlook and Needs" the report has the following to say:

"It is our hope gradually to enlarge our program of education of the masses in the elements of medical science and to show them that progress in the methods of preventing and curing disease is their concern and can come only through their appreciation of what research means and by its support. It must always be remembered that the results of research accrue primarily to laymen and not to the medical profession. The protection of the public from nostrum vendors, quacks and unscientific "healers" generally is likewise dependent upon its understanding of the methods of scientific medicine, what it has accomplished, and a realization of the vast untrodden fields of endeavor still outspread before it. In matters affecting the public health, medical science can only show the way. It is for laymen to avail themselves of the knowledge disseminated from sources of authority."



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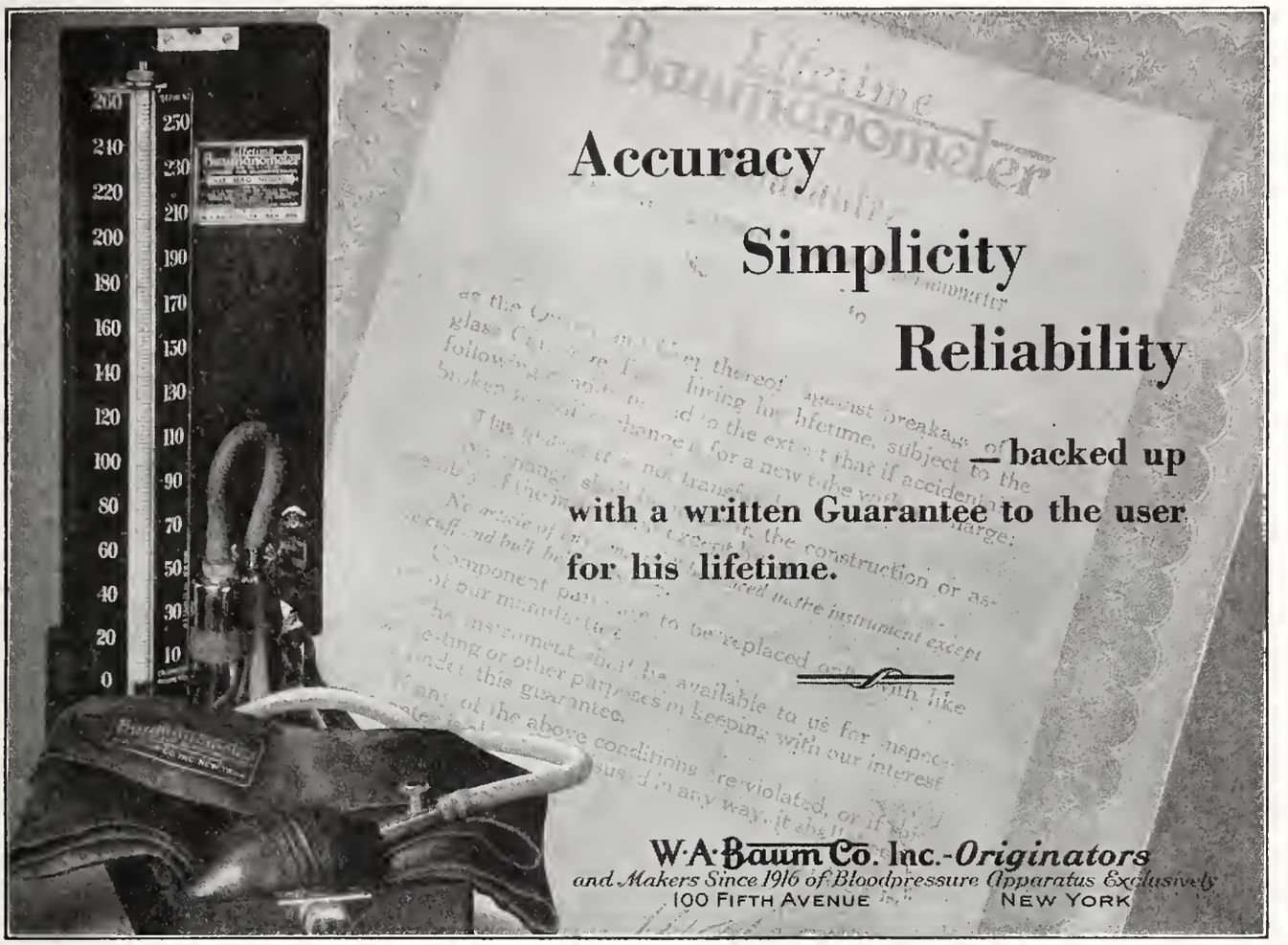

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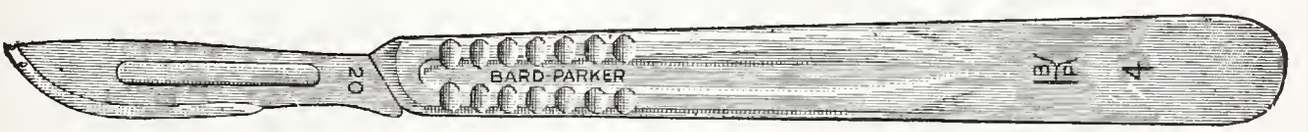

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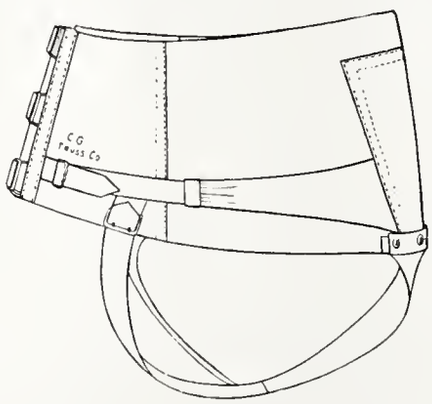

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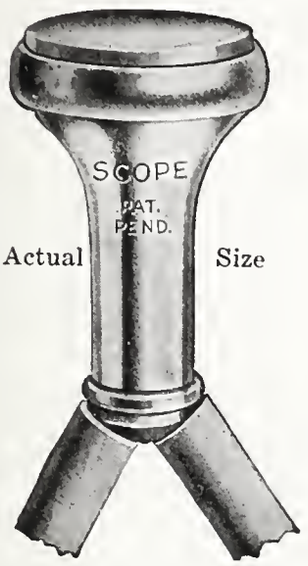

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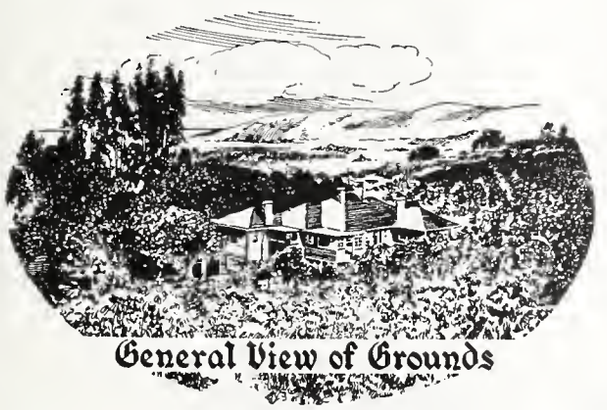

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Medical Problem in Japan—The problems that confront the medical profession are much the same all over the world. In far-off Japan it is found that young medical graduates usually refuse to locate in or near rural districts. To obviate this, if possible, a suggestion of the National Physicians' Association has been taken up by the health authorities of the Home Department. This is to the effect, among other things, that the competent minister may order the city, town, or village authorities to induce a medical practitioner, when necessary, to locate in the areas under their control, or else to increase the number of free medical stations. When this has been done a state subsidy, amounting to from one-sixth to one-half of the amount of money required, may be allotted the local authorities out of state funds. So the drift toward a medical civil service continues.—*Canad. M. A. J.*

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Red Cross "Loan Cow," Greenville, S. C.—The Greenville, S. C., chapter of the American Red Cross owns a "loan cow" which it lends to poor families throughout the county who are in need of milk. The cow was procured some time ago when there was reported a pitiful case of an entire family destitute and suffering from pellagra. Milk was essential to their recovery, and a cow was bought by popular subscription, to be owned by the chapter and loaned to the family. Since the recovery of the pellagra victims the cow has been loaned to other needy families and has been found to be an asset in the relief work of the Red Cross chapter, which is the only organized relief agency functioning throughout Greenville County.—*Boston M. and S. Journal.*

New Mental Hygiene Clinic, New York City—A mental hygiene clinic, which is an outgrowth of the experimental clinic established in 1922 by the National Committee for Mental Hygiene in cooperation with the Association for Improving the Condition of the Poor, was opened in New York City on October 1. This clinic is operated jointly for and by the State Charities Aid Association, the New York Association for Improving the Condition of the Poor, and the Brooklyn Bureau of Charities. An annual budget of $25,000 has been guaranteed for five years, half the funds being provided by the agencies and half by the Commonwealth Fund.—U. S. Department of Labor.

Carpet Workers Contract Anthrax; One Dies—Three cases of anthrax have recently been reported by the health officer of Yonkers, all in persons employed in a carpet mill, who apparently became infected while handling imported wool. Two of the patients are recovering; the third case died on October 6. Two other cases have occurred this year, one in June and the other in August. All are said to have received serum treatment promptly.—*N. Y. Health News.*

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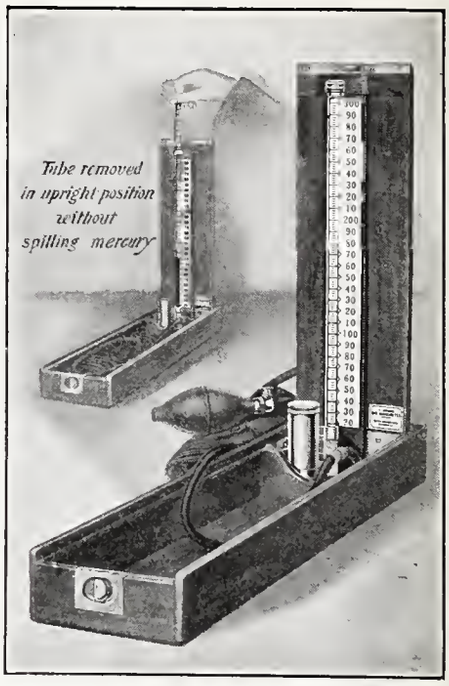

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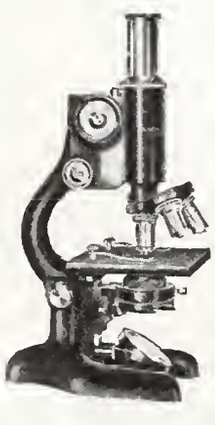

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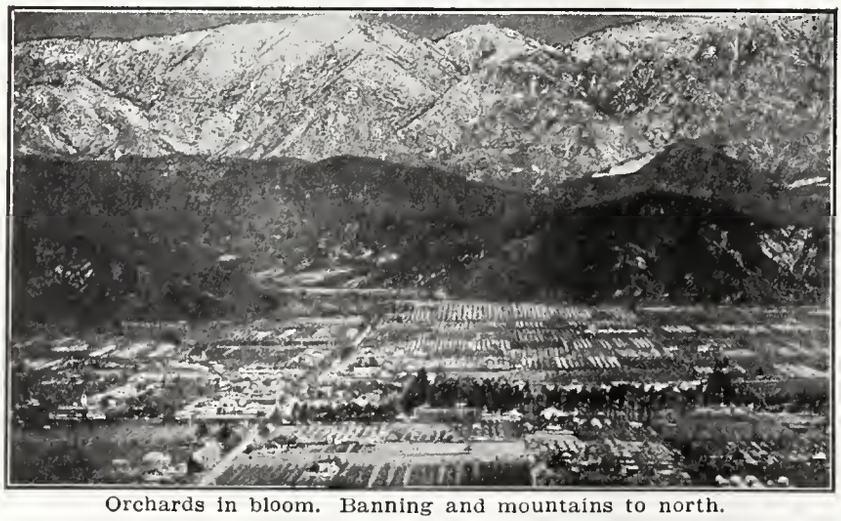

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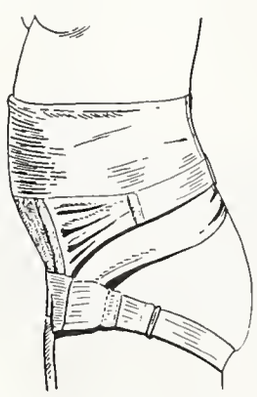

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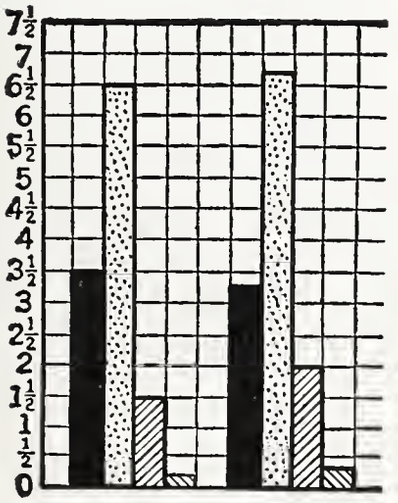

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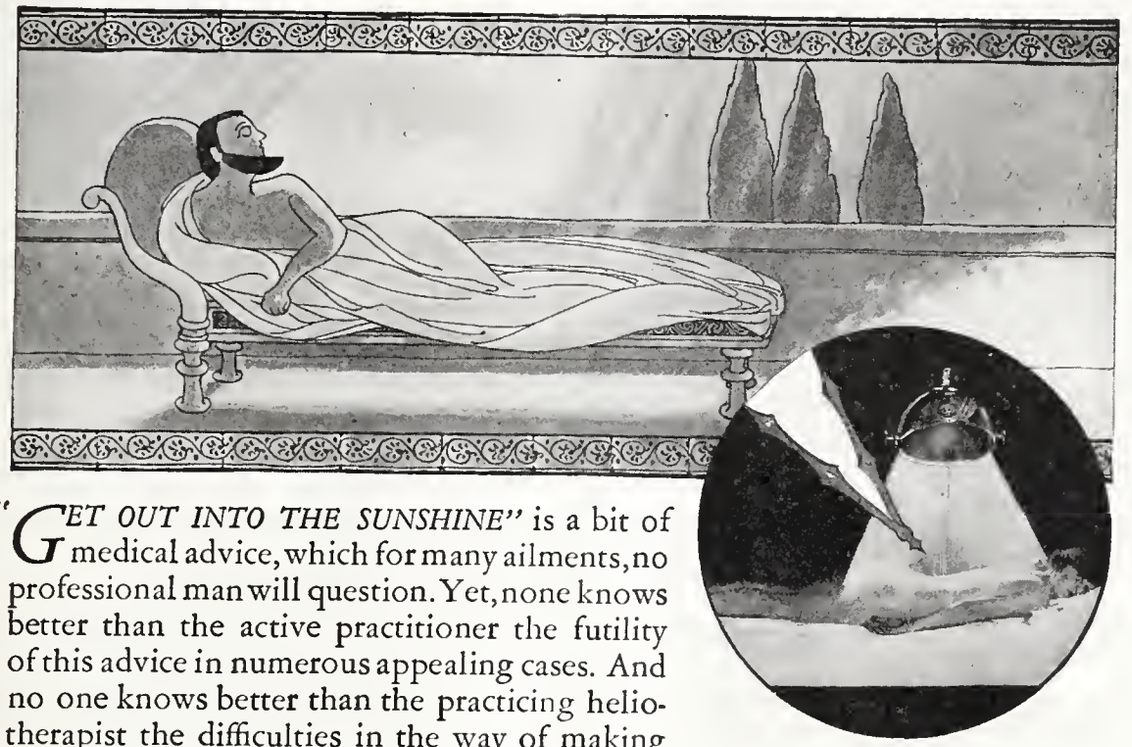

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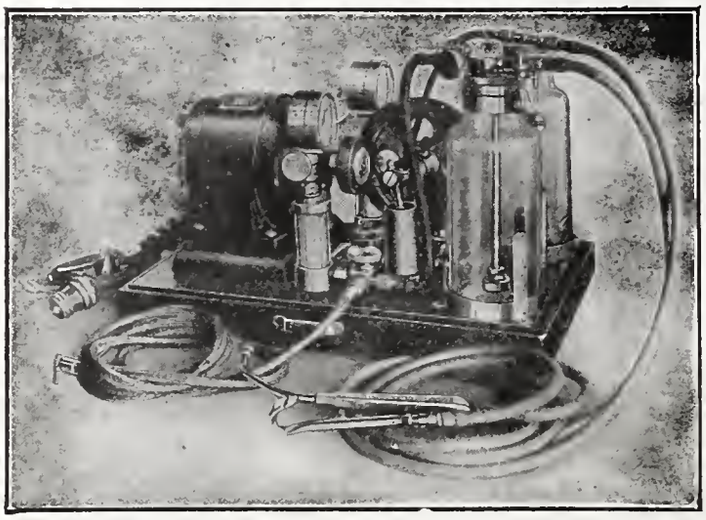

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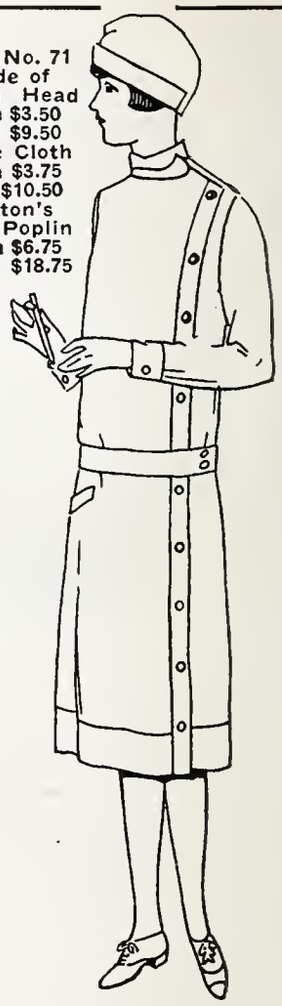

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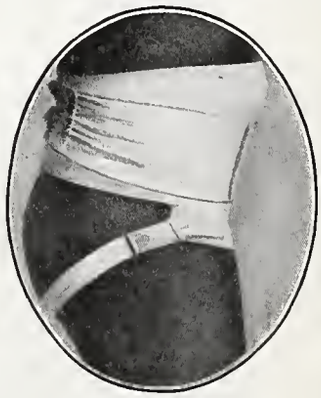

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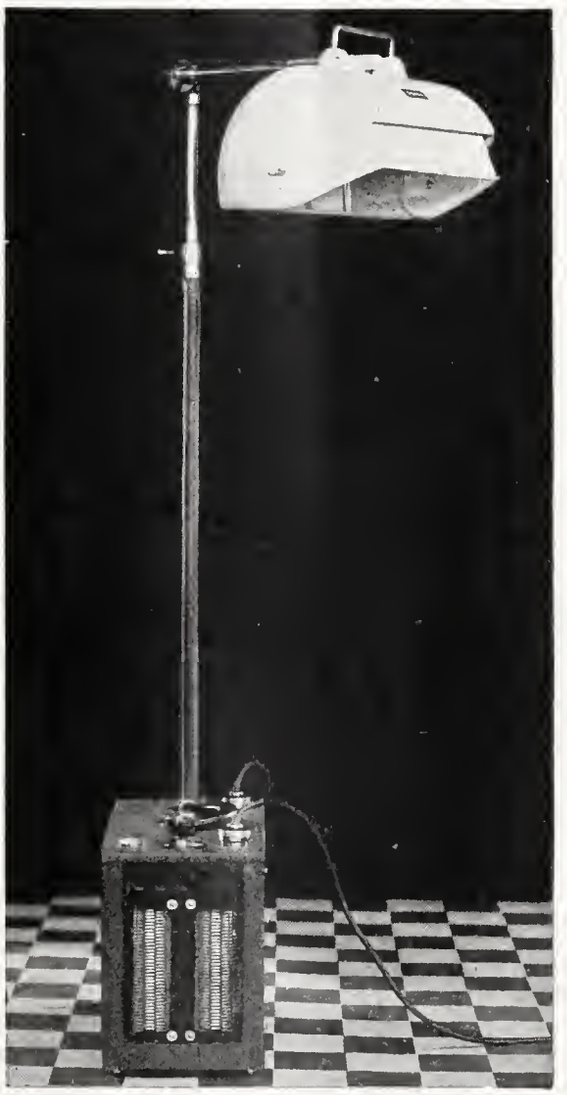

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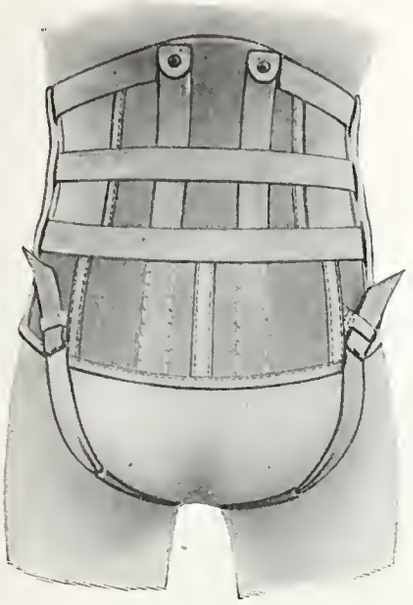

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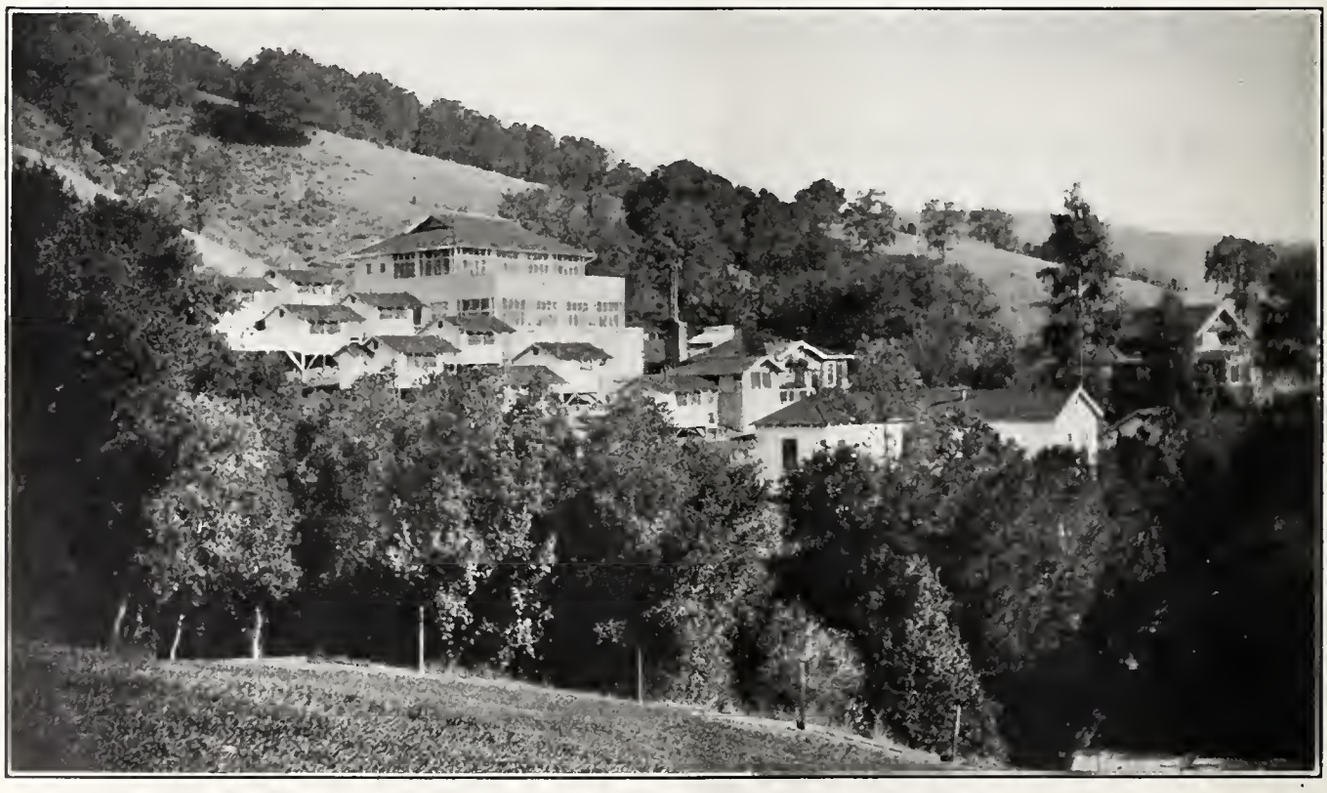

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Much of the progress against tuberculosis has been due to a greater knowledge of the disease, on the part of the laity. This book is a helpful means of bringing people to a saner viewpoint on several aspects of the disease. The chapters on "suspecting tuberculosis" and "accepting the diagnosis" and "learning tuberculosis," both as to its home and sanitarium routine, are of particular value.

The author has also devoted an interesting chapter on the "conflicts with family, friends, and quackery," the value of which, I am sure, we all can appreciate, whether we are dealing with tuberculosis, or any other medical problem.

Principles of Chemistry. An Introductory Textbook of Inorganic, Organic and Physiological Chemistry for Nurses and Students of Home Economics and Applied Chemistry with Laboratory Experiments. By Joseph J. Roe. Pp. 378. Illustrated. St. Louis: C. V. Mosby Company, 1927. Price, $3.

This book is designed for a forty-five to sixty-hour course in chemistry for nurses, and is well constructed for the following reasons: Its language is clear and concise with a minimum of technical terms. The discussions of both inorganic and organic chemistry are limited to only those facts which would have a practical application to the understanding of the biochemical processes in the human body, and the chemistry of hygiene, dietetics, and pharmacology. The fundamental theories are simply stated and explained. Excellent chapters are included in the chemistry of foods, digestion, metabolism, vitamins, and dietary requirements.

The second half of the book consists of a simple manual of laboratory experiments which do not require complicated experimental apparatus, but which will serve to emphasize the theoretical considerations.

The book is entertainingly written and should be readily understood by one not trained in technical language.

A Manual of Materia Medica and Pharmacology. comprising the organic and inorganic drugs which are or have been recognized by the United States Pharmacopeia and National Formulary, together with important allied species and useful synthetics, especially designed for students of pharmacy and medicine, as well as for druggists, pharmacists, and physicians. By David M. R. Culbreth. Seventh edition. Pp. 1046. Illustrated. Philadelphia: Lea and Febiger. 1927. Price, $8.

The author has rewritten this standard text to conform with the recent revisions of the United States Pharmacopeia and National Formulary. Over half the book is essentially a catalogue and description of crude plant drugs, their constituents, adulterants and preparations, while smaller sections deal with organic drugs from the animal kingdom and the mineral drugs. The small section devoted to the synthetic organic compounds seems to be out of touch with the present trend of therapeutics. The pharmacology referred to in the title is confined to a list of disease conditions in which the drug might be used. While this volume is undoubtedly worth while to the pharmacist for reference purposes, it would seem to be of little value or interest to the physician.

Principles of Solution and Dosage. A Textbook for Nurses. By Ann Blumenthal. Pp. 111. New York: The Macmillan Company, 1927.

This work is a small textbook dealing exclusively with elementary arithmetic for nurses. The subjects treated are calculations of strengths of solutions, dilutions, weights and measures in both the metric and apothecary systems, and of dosages. In the introduction are several pages of definitions having little bearing on the main theme of the book, a number of which are simplified to the point of being inaccurate and misleading. A chapter on the interconversion of the centigrade and Fahrenheit temperature readings is appended.

Surgery: Its Principles and Practice for Students and Practitioners. By Astley Paston Cooper Ashhurst. Third edition. Pp. 1179. Illustrated. Philadelphia and London: Lea and Febiger, 1927. Price, $10.

It is exceedingly difficult to compress into one volume the expanding field of surgery and its specialties, and to do so means necessarily the omission of much that is instructive as well as interesting and important. However, much can be said in a few words if the text is well illustrated, and the 1046 excellent illustrations in this book are most valuable and enlightening to a student of surgery. Besides presenting much of interest to a student, it contains many practical hints valuable to the general practitioner. In fact in the presentation of "prac-

(Continued on Page 156)

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BOOK REVIEWS

(Continued from Page 155)

tices" it is probably more definite and precise than it is in the elaboration of the "principles" underlying such practices.

It is regrettable that the book contains but little of historical interest, and that no references to original articles are included. Such references are necessary to encourage the wider reading to which a student should be introduced early in his surgical training.

Gonococcal Infection in the Male. By Abr. L. Wolbarst. Pp. 237. Illustrated. St. Louis: The C. V. Mosby Company, 1927.

As stated in the preface, this book is written with the idea of offering the general practitioner a working familiarity with the present-day methods of diagnosis and treatment of gonorrhea in the male.

Most books written for the benefit of the general practitioner fail to take into consideration the fact that he is a very busy man and is unable to devote much time to the study of this disease.

This criticism is true also in the present instance. Many of the tests are too tedious to be carried out in the busy office. For certain complications, the number and variety of treatments advised are confusing.

This is, however, an excellent book for the physician who has mastered the A B C's of gonorrheal infection in the male and who desires to broaden his knowledge of the subject.

The print is good, and there are many excellent illustrations which assist materially in bringing out the points described in the text.

Appendicitis. By Hubert Ashley Royster. Pp. 370. Illustrated. New York and London: D. Appleton, 1927.

The book is a surgical monograph. It contains chapters on history, anatomy, physiology, etiology, pathology, symptomatology, diagnosis, complications, and treatment. It is written in a clear, rather pleasing English style, and is fairly well illustrated.

The book represents a compilation of what the author feels are useful facts gathered from the literature. The opinions of many of the leading men are given on the disputed phases of the subject. These phases are fully discussed, pro and con, and the author usually gives his opinion after the discussion. In these discussions the author is very charitable, and between the lines one senses a wealth of experience.

The chapter on postoperative care of the patient is rather brief in comparison to its importance. The administration of fluids and glucose and starvation is mentioned, but no definite concerted plan of postoperative care is given in the desperately sick cases. The author states on page 338 that, "in diffuse septic peritonitis recovery is not to be looked for." In the experience of the reviewer the majority of the patients with diffuse peritonitis will recover if the fluids and acid base equilibrium of the blood and tissues are maintained. There is no reference to alkalosis in protracted vomiting or high intestinal fistulas. The recognition and proper treatment of this is most important to prevent death of the patient in a relatively short time. The author has not gone into the blood chemistry in treating these desperately sick patients. The carbon dioxid combining power of the plasma, the blood chlorids and urea content will often point to the need of fluids, glucose or chlorids, all of which can be given with great benefit to the patient.

The chapter on appendicitis in children is excellent. It points out the main differences of the disease in children when compared with adults.

The monograph is a valuable extensive review of the relatively recent literature on the clinical aspects of appendicitis and contains much sound advice. It should be of value both to surgeons and general practitioners.

A Practical Treatise on Diseases of the Skin for the Use of Students and Practitioners. By Oliver S. Ormsby. Third edition. Pp. 1262. Illustrated. Philadelphia: Lea and Febiger, 1927. Price, $11.

This new edition of Ormsby's well-known work is thoroughly revised and brought up to date. The demand for the third edition is evidence of the esteem with which the book is held by the medical profession. It is one of the standard works on the subject.

New Children's Hospital, Atlanta—The plans for a new hospital for children under twelve at Atlanta, Georgia, are nearing completion. It will accept all types of cases except contagious diseases. The first unit will have fifty beds, of which forty-two will be for patients unable to pay. The hospital is made possible through the gift of the late Thomas Egleston.—United States Department of Labor.

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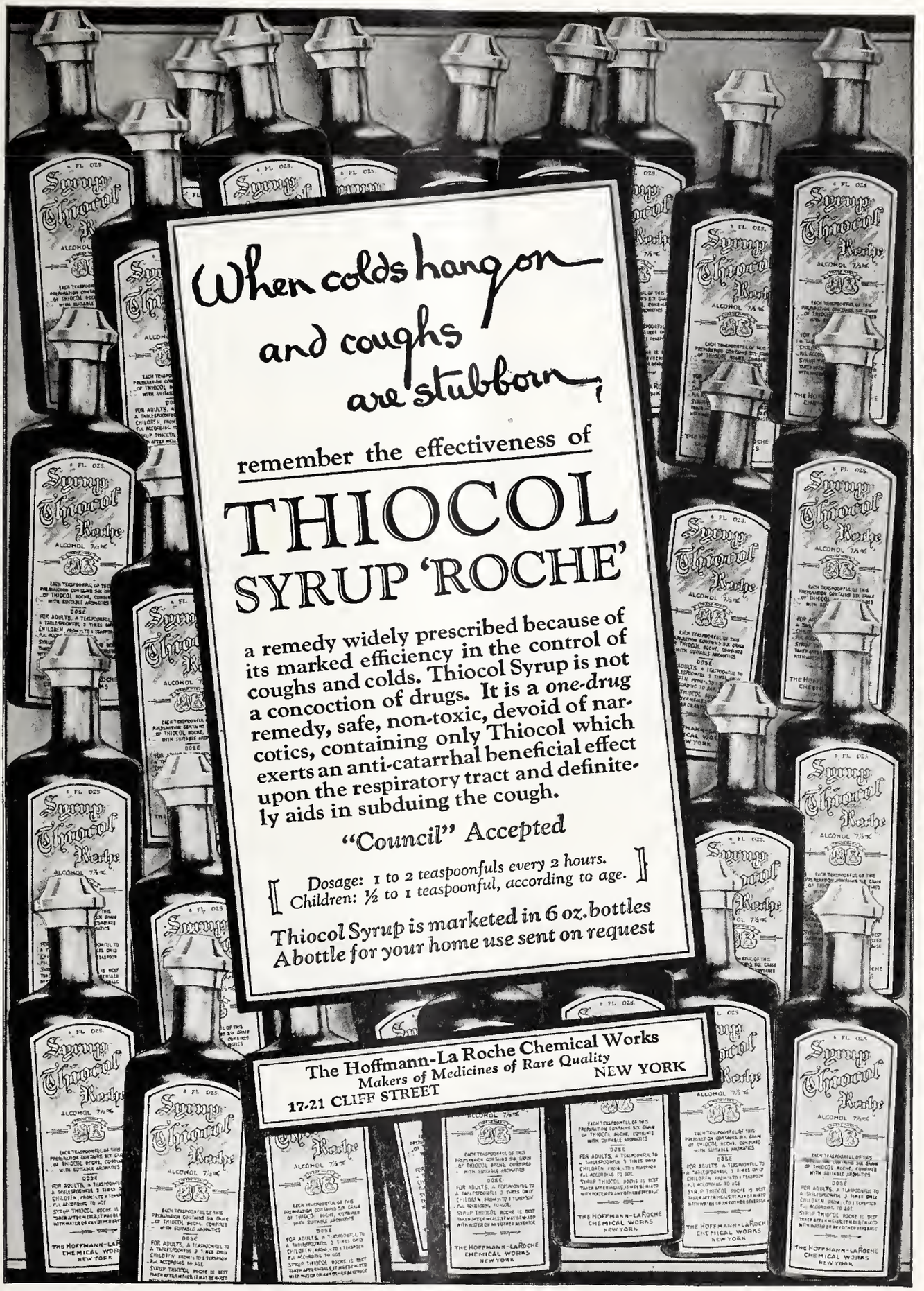
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BOOKS RECEIVED

The Prevention of Preventable Orthopedic Defects, with Special Reference to the Spine and the Feet. By S. C. Woldenberg, M. D. Review copy by courtesy of the publisher, The Bruce Publishing Company, St. Paul.

Methods and Problems of Medical Education. Eighth series. Review copy by courtesy of the Division of Medical Education, The Rockefeller Foundation, New York City.

Annual Report of the Surgeon-General of the Public Health Service of the United States. For the fiscal year 1927. United States Government Printing Office, Washington.

Max von Pettenkofer. His Theory of the Etiology of Cholera, Typhoid Fever, and Other Intestinal Diseases. A Review of His Arguments and Evidence. By Edgar Erskine Hume. With 8 full-page plates. Review copy by courtesy of the publishers, Paul B. Hoeber, Inc., New York.

Poliomyelitis. With Especial Reference to the Treatment. By W. Russell MacAusland, M. D. Illustrated with 173 engravings. Review copy by courtesy of the publishers, Lea & Febiger, Philadelphia.

X-Rays and Radium in the Treatment of Diseases of the Skin. By George M. MacKee, M. D. Second edition, thoroughly revised. Illustrated with 354 engravings and 31 charts. Review copy by courtesy of the publishers, Lea & Febiger, Philadelphia.

The Extra-Ocular Muscles. A Clinical Study of Normal and Abnormal Ocular Motility. By Luther C. Peter, M. D. Illustrated with 98 engravings and 5 colored plates. Review copy by courtesy of the publishers, Lea & Febiger, Philadelphia.

The Foundation of Health. A Manual of Personal Hygiene for Students. By William Barnard Sharp, M. D. Second edition, thoroughly revised. Illustrated. Review copy by courtesy of the publishers, Lea & Febiger, Philadelphia.

A Textbook of Practical Therapeutics. With Especial Reference to the Application of Remedial Measures to Disease and Their Employment Upon a Rational Basis. By Hobart Amory Hare, M. D. Twentieth edition. Enlarged, thoroughly revised and largely rewritten. Illustrated with 158 engravings and 8 plates. Review copy by courtesy of the publishers, Lea & Febiger, Philadelphia.

A Textbook of Medicine. By American Authors. Edited by Russell L. Cecil, M. D. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

Nutrition and Diet in Health and Disease. By James S. McLester, M. D. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

Urography. By William F. Braasch, M. D. In collaboration with Benjamin H. Hager, M. D. Second edition, revised and enlarged. Illustrated with 759 roentgenograms. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

Diagnosis and Treatment of Diseases of the Stomach. With an introduction to Practical Gastro-Enterology. By Martin E. Rehfuss, M. D. With 519 illustrations. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

Bronchoscopy and Esophagoscopy. A Manual of Peroral Endoscopy and Laryngeal Surgery. By Chevalier Jackson, M. D. Second edition, reset with 179 illustrations with 10 color plates. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

Clinical Diagnosis by Laboratory Methods. A Working Manual of Clinical Pathology. By James Campbell Todd, M. D., and Arthur Hawley Sanford, M. D. Sixth edition, revised and reset with 346 illustrations, 29 in colors. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

A Prayer for Nurses—Strengthen and increase our admiration for honest dealing and clean thinking, and suffer not our hatred of hypocrisy and pretense ever to diminish. Encourage us to live above the common level of life. Make us to choose the harder right, instead of the easier wrong. And never to be content with a half-truth, when the whole can be won.

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TRUTH ABOUT MEDICINES

New and Nonofficial Remedies

(Abstracts from reports of Council on Pharmacy and Chemistry, A. M. A.)

Note.—These do not represent all of the actions of the Council, but they do represent those remedies manufactured by firms who cooperate with California and Western Medicine in its advertising columns, and thereby with the physicians in California.

In addition to the articles previously enumerated, the following have been accepted:

Winthrop Chemical Co., Inc.—Phanodorn.

Change of Agency—Gynergen, formerly distributed by H. A. Metz Laboratories, Inc., New York, is now distributed by Sandoz Chemical Works, Inc., New York. The Council has continued the acceptance of Gynergen under the new distributor.

Anaërobic Antitoxin—An antitoxic serum prepared by immunizing animals against the anaërobic bacteria found in gangrenous wounds. Evidence has been published to indicate that the use of anaërobic toxin preparations may be of value in the treatment of gas gangrene.

Anaërobic Antitoxin (Polyvalent) — Lederle — An antitoxic serum prepared by immunizing horses with gradually increasing doses of *B. tetani* and *B. welchii* and Vibrion septique both obtained from anaërobic broth cultures of the organisms. Potency tests for the content of tetanus antitoxin and *B. welchii* (perfringens) antitoxin are made according to the methods prescribed by the United States Hygienic Laboratory; for determining the strength of the Vibrion septique antitoxin, serial dilutions of the antitoxin are mixed with Vibrion septique toxin and the mixtures injected into rabbits. The product is marketed in 100 cc. vials, each cubic centimeter containing 50 units of tetanus antitoxin, 2 units of perfringens (*B. welchii*) antitoxin, and sufficient Vibrion septique antitoxin to neutralize 1000 M. L. D. of the Vibrion septique toxin. Lederle Antitoxin Laboratories, New York.

Ampoules Dextrose (d-Glucose) 10 Gm., 20 Cc.—Each ampoule contains Dextrose, U. S. P., 10 gm.; cresol, 0.1 per cent; distilled water to make 20 cc.; buffered with dibasic sodium phosphate anhydrous and potassium biphosphate anhydrous. H. K. Mulford Co., Philadelphia.

Ampoules Dextrose (d-Glucose) 25 Gm., 50 Cc.—Each ampoule contains Dextrose, U. S. P., 25 gm.; cresol, 0.1 per cent; distilled water to make 50 cc.; buffered with dibasic sodium phosphate anhydrous and potassium biphosphate anhydrous. H. K. Mulford Co., Philadelphia.—*Jour. A. M. A.*, December 10, 1927, p. 2041.

Insulin (Squibb), 100 Units, 10 Cc.—Each cc. contains 100 units of insulin (Squibb) (New and Nonofficial Remedies, 1927, p. 197). E. R. Squibb & Sons, New York.

Staphylococcus Mixed Bacterin—A staphylococcus vaccine (New and Nonofficial Remedies, 1927, p. 363), each cc. containing four thousand million killed *Staphylococcus albus* and *Staphylococcus aureaus* in equal proportions. It is marketed in 5 cc. vial packages; in single 20 cc. vial packages; and in packages of six 1 cc. ampoules. Abbott Laboratories, North Chicago, Illinois.

Erythrol Tetranitrate Tablets (Merck), One-fourth Grain—Each tablet contains one-fourth grain of erythrol tetranitrate (New and Nonofficial Remedies, 1927, p. 267). Merck & Co., Inc., Rahway, New Jersey.—*Jour. A. M. A.*, December 24, 1927, p. 2193.

Typhoid Prophylactic—This typhoid vaccine (New and Nonofficial Remedies, 1927, p. 366), is also marketed in 5 cc. vials containing one billion killed typhoid bacilli per cc.; in 20 cc. vials containing one billion killed typhoid bacilli per cc. Abbott Laboratories, North Chicago, Illinois.—*Jour. A. M. A.*, December 31, 1927, p. 2263.

PROPAGANDA FOR REFORM

Monahato Another Lead and Sulphur Hair Dye—"Monahato" is put on the market by the Moulton Products Co., Lombard, Illinois. It is described as the "original, natural hair tonic." Contrary to the claims on the package, Monahato is not a "natural hair tonic"; it is not "a genuine herb compound," and it does "rely upon harmful chemicals" for the property it has of dyeing the hair. Although the carton declares, by inference, that Monahato contains no lead salts or sulphur, analysis of the preparation in the A. M. A. Chemical Laboratory disclosed the fact that it contains both. In other words, Monahato is essentially a hair dye of the lead-salts and sulphur type.—*Jour. A. M. A.*, December 10, 1927, p. 2059.

Golden Glint—If we are to believe the advertising material that comes with the trade package, Golden Glint (J. W. Kobi Co., Seattle, Washington), "is a specialist's preparation for harmlessly beautifying the

(Continued on Page 162)

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TRUTH ABOUT MEDICINES

(Continued from Page 160)

hair." There is also a "Golden Glint Shampoo." From an examination made in the A. M. A. Chemical Laboratory it appears that Golden Glint is essentially a mixture of anilin dyes, such as methyl violet (used in indelible pencils) and Bismarck brown, with excipients.—*Jour. A. M. A.*, December 10, 1927, p. 2059.

Poliomyelitis Antistreptococcus Serum—In cases of epidemic poliomyelitis that come under treatment after the paralysis is well established, the best that can be done is to give as good general medical and nursing care as possible. Cases have been described in which convalescent serum—serum from patients who have recovered from the acute symptoms of the disease—appears to have prevented the development of paralysis. The use of Rosenow's poliomyelitis antistreptococcus serum can be justified only as an experiment. The claims of Eli Lilly & Co. to the contrary notwithstanding, this serum so far has not been accepted as of such value as to warrant its general use. —*Jour. A. M. A.*, December 10, 1927, p. 2061.

The Rectal Administration of Ether and Oil—The Council on Pharmacy and Chemistry has authorized publication of a report prepared by R. A. Hatcher on the Gwathmey Method of Anesthesia, concerning the rectal administration of ether and oil. Doctor Hatcher summarizes his report in part, thus: The admixture of ether with oil or liquid petrolatum constitutes an advance over other methods for the rectal or colonic administration of ether. Probably a mixture of equal volumes of ether and olive oil (or liquid petrolatum) is the most suitable for inducing anesthesia by rectal instillation after the subcutaneous injection of morphin. The method has certain advantages and also certain disadvantages. It shares with anesthesia by inhalation certain drawbacks. There is an urgent need of detailed statistical studies of accidents due to anesthesia conducted in various ways. The choice of an

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anesthetic and its mode of administration should be made with the same care with which one chooses other therapeutic agents in the treatment of disease, and the use of any method as a routine is irrational and dangerous.—*Jour. A. M. A.,* December 17, 1927, p. 2114.

Progress in Obstetric Anesthesia and Analgesia—For almost fifteen years, the method of Gwathmey, involving the rectal administration of ether and oil for anesthesia, has been before the profession. More recently the method has been combined with the subcutaneous injection of magnesium sulphate, particularly for use in obstetrics. Varying reports have appeared in medical literature as to the value of these procedures under such conditions as are encountered in the clinic, in the hospital, and in private practice. It seemed desirable, therefore, for the Council on Pharmacy and Chemistry to prepare a statement of the present status of these methods.

The Health Angle in Advertising—The physician has become a prophet in the land, and health is the word with which one conjures. Regardless of the substance to be advertised, the agency goes forth in search of medical opinion with which to vaunt it. A soup is sold with the claim, "There is health in every spoonful." Of certain toilet accessories it is said, "Your doctor will advise against harsh, rough papers." Certified milk is called "health bottled in bond." And so it goes. The doctor's advice has been sought, it seems, for many of the most mundane affairs of human existence. The difficulty of evaluating advertising copy in these modern times is an evidence of the changing situation. The modern agency supports by evidence the claims for the products promoted. The presentation of such evidence often seems an exaggeration of conditions as they are, yet the evidence is almost invariably actual. No doubt physicians have been too ready to accept broad generalizations in the field of hygiene. They seldom require the

(Continued on Page 172)

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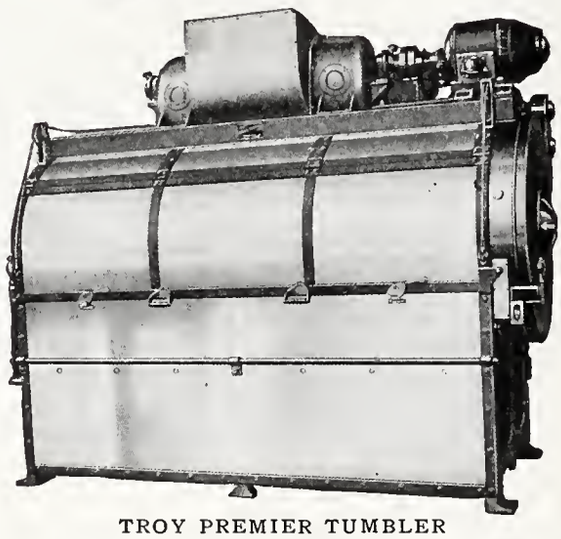

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Shocked to receive a lawyer's letter about a former patient who threatens to sue me for work done two years ago.

Feb., 1926.
Engaged a lawyer—expect to win case if it gets to court—

May, 1926.
Case was tried yesterday; $15,000 damages asked; jury gave verdict against me for $8,000—will appeal.

June, 1926.
Paid lawyer $300; witness fees, etc., $150. Heard today case has been appealed.

Nov., 1926.
Tried in appellate court—verdict confirmed. My former patient given damages $8,000.

Dec., 1926.
Paid lawyer, etc., $425.

Jan., 1927.
Sold bonds, $2,000; sold stocks, $3000; mortgaged house, $3,000.

Mch., 1927.
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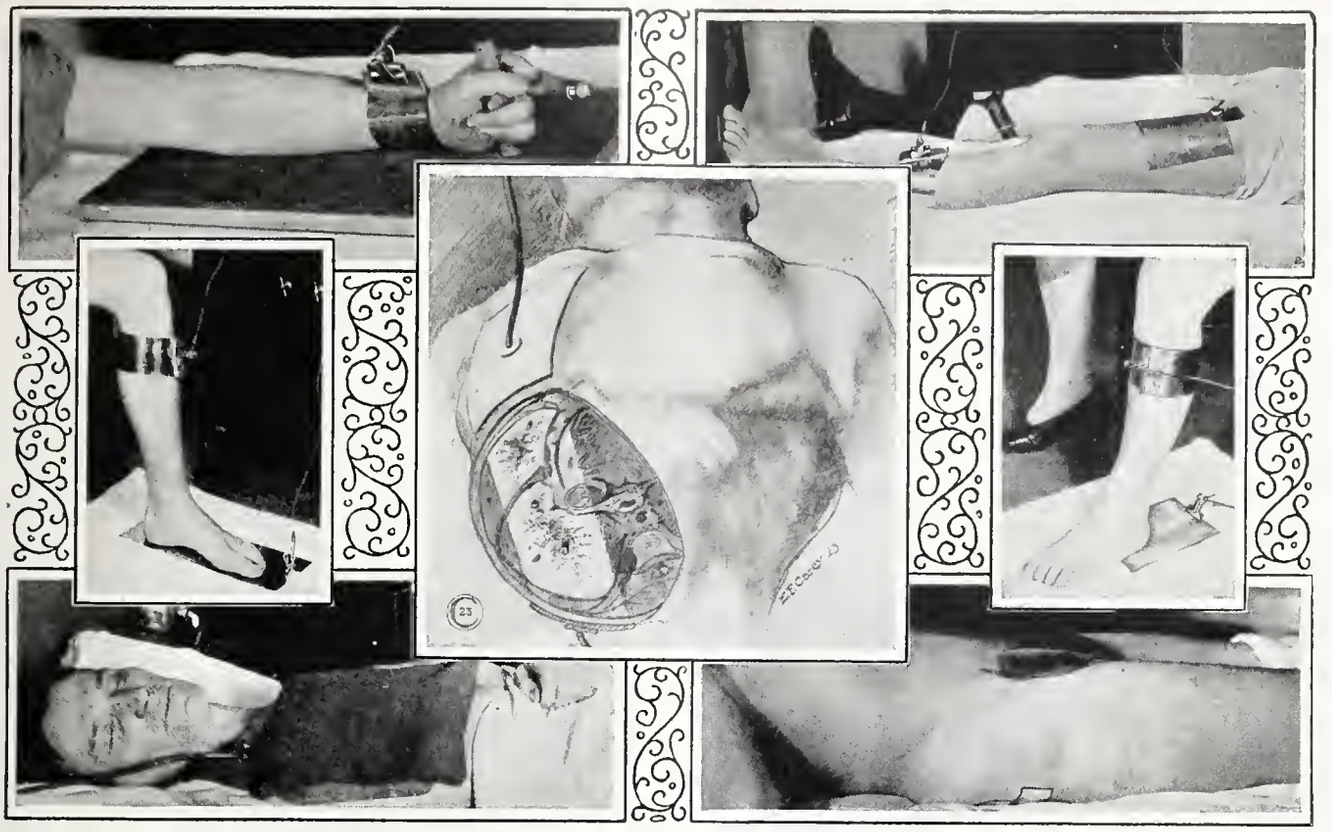

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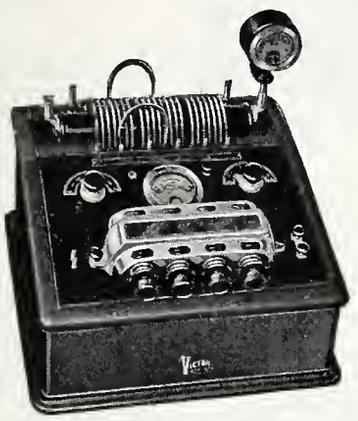

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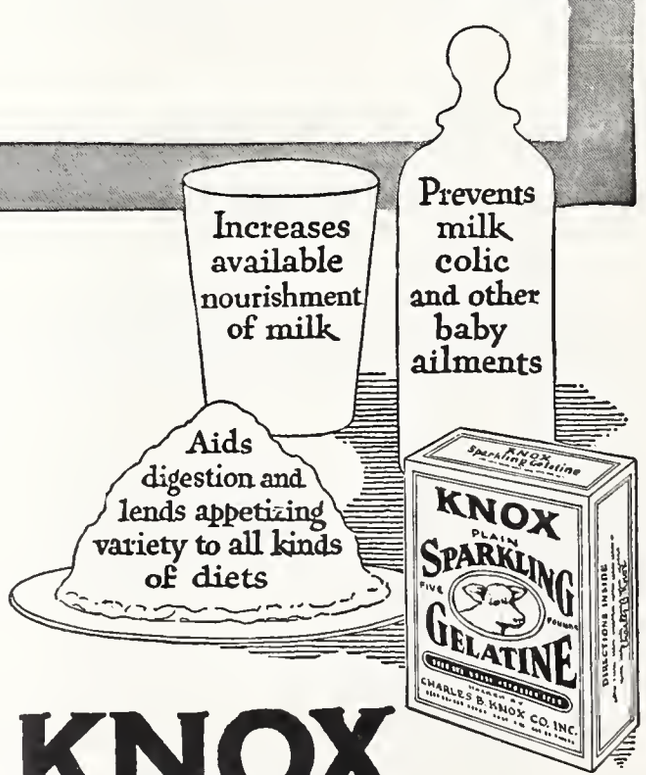
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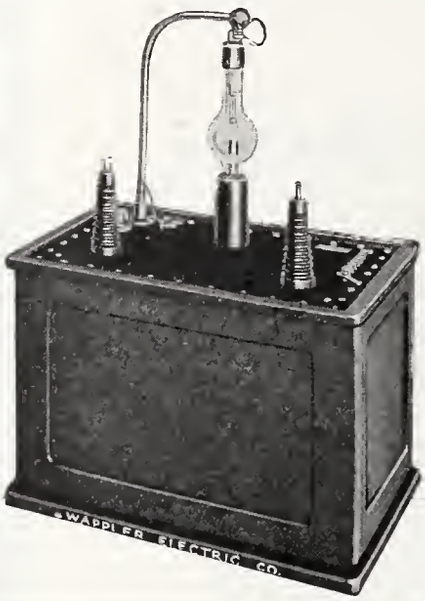

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TRUTH ABOUT MEDICINES

(Continued from Page 163)

same kind of evidence in support of a cleansing agent, a dietary product or tobacco that they would demand in support of a new remedy. Hence the promoters are easily able to secure the necessary number of medical endorsements. Fortunately the situation may take care of itself; the overdoing is certain to result in reaction. But if the great minds in the advertising agencies are wise they will begin to reconsider now. Otherwise the good is likely to be lost with the evil.—*Jour. A. M. A.*, December 24, 1927, p. 2195.

Analgesia in Childbirth—The Council on Pharmacy and Chemistry has authorized publication of a report prepared by R. A. Hatcher on the Gwathmey Method of Anesthesia, concerning analgesia in childbirth. The available evidence indicates that the use of morphin during the first stage of labor, and ether or chloroform for the second stage, appears to be the accepted procedure, and that morphin with chloroform appears to present special dangers. With proper precautions morphin sulphate in the dose of 0.01 gm. (one-sixth grain) for a woman of average size, is virtually without danger. The report concludes that no method of inducing analgesia is suitable for universal use. So-called painless childbirth is frequently a most difficult problem. The general practitioner is often misled into believing that he can secure better results by the method that he reads about than by the methods with which he is familiar, when in truth it presents no essential advantage, and, on the contrary, it will prove inferior in his own hands to that with which he has acquired a certain degree of skill. In view of this, the commercial exploitation of proprietary products based on the Gwathmey formulas is potent for much harm, since it will inevitably tend to promote the thoughtless and ill-advised use of the method.—*Jour. A. M. A.*, December 31, 1927, p. 2258.

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CALIFORNIA
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WESTERN MEDICINE

VOLUME XXVIII FEBRUARY, 1928 No. 2

SURGICAL ASPECTS OF CHEST INJURIES*

By CHARLES D. LOCKWOOD, M. D.
Pasadena

DISCUSSION *by Emmet Rixford, M. D., San Francisco; Charles H. Bulson, M. D., Napa; Clarence A. Johnson, M. D., Los Angeles.*

THE modern treatment of chest injuries is based largely upon experience attained in the World War. The lessons learned by this experience have not been as fully utilized in civil practice as they should have been. To be sure, the chest injuries of civil life are not so numerous nor so extensive as those of war and they differ greatly in character, but the anatomic and physiologic principles underlying all chest injuries are the same and regarding these much valuable data was accumulated during the war. As in other fields of chest surgery, the closest cooperation of the surgeon, the medical man and the roentgenologist is necessary in the successful treatment of chest injuries.

The subject of chest injuries may be divided into the following: (1) The injuries of the chest wall. (2) Injuries of the pleura. (3) Injuries of the lungs.

1. Simple fracture of the ribs where not more than two or three are injured is rarely serious. Simple strapping with adhesive is all that is necessary. Where many ribs are broken, however, there is grave danger of shock and of lung complications, particularly in older people. Hemo- and pneumothorax and massive collapse of one or more lobes of the lung may result without injury to the skin. These complications should be kept constantly in mind and carefully checked by frequent physical examination and x-ray pictures. (The essayist reported a case illustrating this danger.)

In multiple rib fractures the chest is best immobilized by a light plaster of Paris cast entirely encircling the chest and split down the center after the plaster has partially dried. The most serious injury to the chest wall is the "stove in" chest.

In this injury many ribs are fractured and fragments are driven into the pleura. This condition may be due to gun-shot wounds, to any flying missile, or to severe compression. Such injuries are usually fatal unless skillful surgery is resorted to. An attempt should be made to elevate sharp, jagged fragments which are liable to puncture the pleura or lung. Such fragments can often be held in place by anchoring them to adjacent sound ribs by heavy catgut or kangaroo tendon. Multiple rib fractures are sometimes associated with fracture of the neck of the scapula and there will be marked deformity of the shoulder girdle. Such cases should be treated by heavy traction on the extended arm, as in the Bardenheuer treatment of fractures of the humerus. (The essayist reported a case illustrating this condition.)

2. The most distressing type of chest injury is the sucking wound, seldom seen in civil practice but very common in the recent war. Patients suffering from such injuries present a tragic sight; cyanotic, with marked dyspnea, blood and air being alternately sucked in and expelled by respiratory efforts, the lung collapsed, and the patient in profound shock. Startling improvement follows air-tight closure of such wounds either by skin suture or by plugging the wound with moist gauze. Injuries to the pleura are often associated with injuries to the chest wall or may result from penetration of a foreign body. The complicating pleural exudate is the most serious feature of such injuries. These exudates may be either serous, hemorrhagic, or purulent. Frequent aspirations guided by the physical signs and x-ray will usually restore the pleural cavity to a normal state. Purulent exudates will often require rib resection and free drainage. If the pleural cavity has been widely opened by the injury it should be cleansed and tightly sutured immediately. The complicating exudate can best be handled through some intact portion of the chest wall. Wounds of the diaphragm should be closed by intrathoracic suture.

3. Injuries to the lung: The most common injury to the lung encountered in civil practice is that due to gun-shot wounds. The ordinary steel-jacketed rifle bullet in its passage through the lung in most instances will cause little damage. Hemothorax often followed by empyema will result. If the bullet has penetrated the chest such a case should be treated expectantly. Frequent aspirations will often result in complete restitution. If pus forms, early rib resection and drainage are indicated. Soft-nosed bullets, those which have been deflected in their flight and fragments of shell entering the lung cause extensive laceration of the lungs and are often quickly fatal. Prompt and bold surgery will save many such cases. The chest should be widely opened by resection of the fourth rib from the midclavicular to the posterior axillary line. A Tuffier rib retractor or an ordinary Balfour abdominal retractor will give excellent exposure. The chest cavity should be cleansed of foreign bodies and clots and bleeding vessels ligated, and in case of extensive laceration of one or more lobes, lobectomy should be performed. Hemorrhage from the lung need not be feared; it can be controlled by mattress

* Read before the California Medical Association, Industrial Medicine and Surgery Section, at the Fifty-Sixth Annual Session, April 25-28, 1927.

sutures. In cases of severe lung injury with hemorrhage, active surgical treatment will save many lives; inaction will usually end in death. In young persons of good vitality, thoracotomy, free exposure of the bleeding lung and ligation should be practiced. Foreign bodies in the lung which are encapsulated and which are not giving rise to symptoms should not be disturbed.

An interesting complication of chest injuries is "massive collapse of the lungs." This phenomenon should be familiar to every surgeon dealing with chest injuries. It may result from an injury to the chest wall without penetration or it may be due to the entrance of a missile into the pleural cavity or lung. Massive collapse is a state of atelectasis in which a part or all of the lung is devoid of air. As the lung on the affected side collapses, the mediastinum and heart are drawn toward a position of marked obliquity and there is a compensatory emphysema of the opposite side. The absence of breath sounds on the affected side, the dullness on percussion and the dyspnea from which the patient suffers often lead to a diagnosis of hemothorax and needless attempts at aspiration are made. Moreover the emphysema and hyperresonance of the opposite side may lead one to suspect pneumothorax and attempts to aspirate air will further complicate the condition. The collapse may occur on the side opposite to the injury and this still further complicates the diagnosis. The symptoms are characteristic and these coupled with the x-ray findings and physical examination should enable one familiar with the condition to make a diagnosis. The symptoms are intense dyspnea of sudden onset, cyanosis, rapid respiration and pulse, and an absence of fever. The physical examination reveals an absence of breath sounds, flatness of the affected lung, displacement of the heart to the affected side, and hyper-resonance of the contralateral lung. The x-ray shows the lung retracted, increased in density, the heart and mediastinum pulled toward the collapsed lung and there is a marked obliquity of the ribs on the affected side. The condition is rarely fatal and requires little treatment. Spontaneous adjustment takes place in twenty-four to forty-eight hours, with gradual re-expansion of the collapsed lung.

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DISCUSSION

Emmet Rixford, M. D. (1795 California Street, San Francisco)—This paper might well be described as an example of "multum in parvo." For in a bare 1200 words Doctor Lockwood describes most of the traumatic lesions of the chest and epitomizes the essentials of proper treatment for each. However, there are some others, rare to be sure, but most interesting lesions which are evidently crowded out by the brevity. I refer particularly to concussion, contusion, and compression of the chest. Three similar but very definite clinical entities. In their etiology and symptomatology they are singularly like the corresponding lesions of the brain.

Concussion of the chest, most frequently found to have been delivered on the sternum. The symptoms are those of shock which may be rapidly fatal without anatomical lesion discoverable at autopsy. Lesser degrees of shock are rapidly recovered from.

Contusion of the chest results from a blow generally given of less velocity and most often found to have been received on the lateral walls of the chest. The resulting lesion of the intrathoracic viscera depending on the elasticity of the chest wall which, by its yielding, permits the force of the blow to be transmitted to the underlying viscus.

Compression of the chest occurs as the result of traumatism at extremely low velocity producing a clinical picture, depending in character and intensity on the duration of the squeeze. In marked cases it results in cyanosis of the head and neck, edema, and multiple petechial hemorrhages from the eyes, nose, mouth, and skin.

Another lesion which occurs only in the young may be compared to what we have called the "bottom of the dishpan" fracture of the skull in infants, where the bone is sprung inward without fracture and which requires to be sprung out again by pressure from the inside or by traction by means of a hook introduced from without into the apex of the depressed skull plate or in the case of the chest into the sternum on the depressed group of ribs.

A word on simple fractures of the ribs. Doctor Lockwood says "Simple strapping with adhesive is all that is necessary." I would like to add that the pain is to be relieved only by putting the adhesive straps completely around the chest thereby immobilizing both sides.

Charles H. Bulson, M. D. (Migliavacca Building, Napa)—Like Doctor Rixford, I find few points in Doctor Lockwood's paper that have not been fully covered in a concise manner. The cases of chest injury that come under the surgeon's observation in civil practice are somewhat different in this respect; that the greater number of them are seen soon after the accident, while a vast majority of those received during the World War were not brought under treatment until many hours afterward, when serious complications had already taken place. The earlier chest injuries can be placed under competent surgical care the better chance the patient has for good recovery. While this is an axiom in all severe surgical injuries, it is especially important to injuries to the chest and abdomen, where shock is usually great and sepsis rapid in onset.

In closed or penetrating wounds of the chest, such as those received from a rifle bullet, shock is not so severe, as the injury to the lung is not so great; and the hemorrhage is slight, often giving rise to few symptoms. Exceptionally, however, where there is evidence of concealed hemorrhage, there will be manifested dyspnea, painful cough and increased pulse rate, thirst, impaired percussion over injured side; associated with profound shock. It is the wound associated with fractures of the ribs that produces the most alarming symptoms.

In open wounds of the chest, such as those produced by a spent or deflected bullet with low velocity, we find comminution of the ribs with laceration of the lung and pleura, and severe hemorrhage and shock. The hemorrhage is more apt to be due to the traumatism of the blood vessels of the parietal pleura than to the lung.

Doctor Lockwood has well outlined the treatment of these injuries. In those cases of concealed hemorrhage where paracentesis thoracis is indicated it is advisable to delay the operation for several days in order to prevent further hemorrhage. Some surgeons advise oxygen replacement to prevent sudden re-expansion of the lung. With ordinary paracentesis it is not advisable to withdraw all the fluid at one time, while with oxygen replacement large quantities may be withdrawn rendering it unnecessary to repeat the operation. Those having extensive experience with oxygen replacement claim no untoward results. Personally, I have not used this method.

I believe that the early treatment of shock cannot be overlooked, and have found that morphin not only relieves the pain but steadies the heart action. Another point that cannot be overlooked in treatment of chest injuries is sudden embarrassment of the circulatory system due to displacement of the heart and great vessels, a condition that requires constant sur-

vcillance for impending signs of circulatory failure. In all gun-shot wounds tetanus antitoxin should be administered as soon as the patient's condition warrants.

CLARENCE A. JOHNSON, M. D. (523 West Sixth Street, Los Angeles)—Doctor Lockwood has given us a most excellent paper and I see little left for discussion. However, the third topic, the question of how best to treat the lung that has been injured by a missile from some firearm, I shall attempt to discuss. This is an injury which is more likely to be encountered in civil practice, and which was frequently seen by me during the World War, as my work was in the base hospital and not at the front.

Wounds which penetrate the chest and do not kill outright give phenomena associated with entry of air into the pleura and resultant collapse of the lung with loss of blood. I know of nothing more alarming to the surgeon than a patient with a collapsed lung and hemothorax. I believe that the best treatment is the free use of an opiate, as the patient as well as the doctor is alarmed, and anything which will slow circulation and retard respiration are the results most desired.

Foreign bodies in the lung which do not produce symptoms should be, as Doctor Lockwood stated, left alone. Occasionally we found a patient in the ward with a definite foreign body in the lung which had penetrated a large vessel and also a bronchus. Through obstruction of the air passage by hemorrhage, cyanosis resulted which necessitated the removal of this foreign body in order to save the soldier.

Operation on the lung for a foreign body should be through a resection of at least two, and possibly three ribs in the region where the foreign body has been located by x-ray. A good exposure of these cases is absolutely necessary in order to avoid traumatism of the surrounding lung with resulting hemorrhage.

THE ASCENDING COLON: NON-MALIGNANT ABNORMALITIES AND CONSTRICTING BANDS*

By FOSTER K. COLLINS, M. D.
Los Angeles

DISCUSSION *by Andrew Stewart Lobingier, M. D., Los Angeles; Alanson Weeks, M. D., and G. D. Delprat, M. D., San Francisco; Edmund Butler, M. D., San Francisco.*

THE ascending colon is that portion of the large intestine extending from the cecum to the liver.

The object of this paper is to attempt to show that these eight inches of intestinal tract are responsible for many of the symptoms for which other organs have been condemned.

Faulty positions and constrictions bring about pathology peculiarly reflected in other organs, while the ascending colon, the real offender, too often remains unsuspected.

Unrecognized, congenital or acquired, abnormalities in the ascending colon have frequently cast suspicion upon the operating ability of a surgeon, since the real causes of the symptoms, concerning which it was hoped the surgeon would find, were not removed.

More or less vague abdominal symptoms have been diagnosed as due to a diseased appendix or gall bladder, gastric ulcer, or other condition, and have caused operation for such. At operation, however, the organs in question may have been found more or less abnormal due to changes secondary to the real pathology in the ascending colon.

It is the plea of this paper that in non-acute conditions involving the right abdomen, deformities about the ascending colon be understood and diagnosed, if possible, before operation. These should be sought for at operation with a confidence that symptoms in other organs, due to stasis, absorption, and irritation, will frequently clear up permanently with proper operative procedures. In our experience, the correction of such mechanical defects has given most satisfactory results.

DEFORMING BANDS

We are convinced that in many cases, through x-ray study, a fairly definite preoperative diagnosis can be made of size, abnormal positions, and deforming bands, causing what we are pleased to call "water trap" colon, similar to the "water trap" stomach described by Douglas.[1]

It is this "water trap" type we wish to emphasize. In this type, bands from the ascending colon bind the transverse colon down toward the cecum, causing an acute angle at the hepatic flexure, and another in the transverse colon, where the band is attached. The resulting condition is mechanically identical to a water trap in the plumbing of any sink. As a result the ascending colon is more or less constantly distended with fluid, semisolids or gas. The symptoms are of a chronic or subacute nature. Frequently they are fairly distressing, but it is characteristic that with change of position the gut may empty and the symptoms quickly subside, only to regularly recur as the colon again distends. This distention, stasis, and absorption, lays the foundation for real pathology in the appendix; and by pressure on the ducts, the gall bladder, pancreas, or other organs, are involved. The drag of an overdistended ascending colon on the root of the superior mesenteric artery is a cause of duodenal distention and stasis.

Bands may cross the fundus of the gall bladder causing a pull upon that organ with each overdistention of the colon. Other firm short bands are not uncommon from the right abdominal wall to the ascending colon, causing pouching and constrictions, all with somewhat the same train of symptoms.

Duval[2] discusses deforming bands about the ascending colon and the results produced by their deforming influence, especially in forms of colitis.

We believe such pericolic Jackson membranes,[3] and others which are frequently present, to be of more importance to diagnose and treat in so-called chronic appendicitis than the appendix itself. In this condition the patient is often of a neurasthenic type, is undernourished and usually constipated. There are more or less constant nagging pains in the right gastro-intestinal region, with frequent flatulence and tenderness in the right iliac fossa. There is seldom an acute attack. Surgery is indicated, since it is a mechanical trouble. The bands should not reform when cut, since the broad surface of the colon makes it possible to completely cover the raw surfaces.

Bands, congenital or acquired, are occasionally

* Read before the California Medical Association, Section on General Surgery at its Fifty-Sixth Annual Session, April 25-28, 1927.

found binding the colon to the anterior abdominal wall.

We will report a case where a congenital fibrous stalk attached at the umbilicus drew the midportion of the ascending colon toward the midabdomen at an acute angle.

DEFORMITIES CAUSED BY OTHER CONDITIONS THAN BANDS

Diverticuli occur as part of general diverticulosis of the colon. Pouches are also formed from overdistention. In several such cases of pouches we have turned these in by suturing and implication with satisfactory results.

Congenital dilatation—Hirschsprung's disease—is rarely present. In this condition the entire colon is many times larger than normal. This subject has been recently comprehensively covered by Hofmann and Ewell.[4]

An entire absence of the colon is also rare.

Deformities of the ascending colon are caused from compression by displaced organs such as displaced kidney, gall bladder, mesenteric cyst. The ascending colon is deformed as part of a generally contracted colon, in chronic spasm, with intermittent abdominal pain. This condition often is relieved by belladonna with hyoscyamus, and periods of rest in bed. There is always a tendency to relapse. Intussusception should be mentioned, but here the ascending colon acts simply as the host of an undesirable tenant.

ABNORMAL POSITIONS

The mesentery of the small intestine and the ascending and transverse colon may be attached only near the origin of the superior mesenteric artery, giving a condition known as "mesenterium commune," Piersol.[5] There is then really an absence of the ascending colon; the small gut is therefore not crossed by the colon; there is no ligament of Trietz present to help locate the first portion of the jejunum. As in partial rotation, this condition should be borne in mind in performing gastro-enterostomy, Matthews.[6]

The ascending colon may be so long as to form folds, and its mesentery is known to have been twisted. It is also not infrequently found so detached as to form part of the contents of a femoral, inguinal or other external or internal hernia. The subject of ptosis of the right colon has been fully covered by Quain.[7]

A failure to rotate or descend normally is discussed in the comments on development.

The colon may be transposed and found in the left abdomen, in identical relation to left side organs as to the right, when in normal position. This may be a part of a total or partial transposition of the viscera. In true congenital transpositions the total is more common than a partial transposition, Arneill.[8] According to Gant [9] three hundred cases have been reported. We have seen and diagnosed three patients with complete transposition of the viscera, and have operated upon two; and also show with this paper the x-ray findings of complete transposition of all viscera of chest and abdomen in a patient who was recently operated for abscessed appendix.

Both rotation and migration may be aberrant and result in malformations. The appendix, for instance, is often caught in the descent of the cecum and held up back of the ascending colon in a retroposition. Many bands and deformities, thought to be acquired, are due to developmental errors. Such malformations can be shown to run in families. A well-known law of heredity affirms that acquired malformations are never, but that congenital forms are inherited, Lynch.[10] When congenital deformities, such as harelip, cleft palate, hernia, are found, it is well known that other defects are likely to be found, and this should be borne in mind in considering abdominal symptoms.

Before reviewing our cases we will mention the normal gross anatomy and relations of the ascending colon.

ANATOMY OF THE ASCENDING COLON

The ascending colon extends a distance of about eight inches from the cecum to the undersurface of the right lobe of the liver. It is covered laterally and anteriorly by the peritoneum. Posteriorly, areolar tissue, together with the peritoneum reflected from the lateral surfaces, bind the organ to the quadratus lumborum and psoas muscles and to a portion of the anterior surface of the right kidney. The ileum and anterior abdominal wall lie anterior to the organ. A slight constriction, even with the upper border of the ileum as it enters the cecum, marks the beginning of the cecum. The undersurface of the liver is decidedly notched where the hepatic flexure, the transverse colon, begins.

EMBRYOLOGY

In considering the normal position of the ascending colon we are compelled to consider also the development of the part, since it is impossible to understand certain positions, without a knowledge of the normal and more unusual processes of rotation and descent of this organ.

About the third week of embryonic life the intestinal tract begins to appear as an entity between the stomach and caudal end. Rapid changes take place and a U-shaped loop of intestine forms. The vitalline duct attaches itself to this loop and the umbilicus. This duct persists wholly or in part in 3 per cent of all children born, and is the origin of Meckel's diverticulum. Normally to the right of this attachment the cecum forms a pouching, the beginning of the formation of the large intestine. About the sixth or eighth week the large intestine consists only of a transverse and descending colon and rectum. About the third month the cecum rotates over the right kidney into the second, or canine position, and there is little further descent until after birth. With the later descent the ascending colon rotates to the right and attaches itself fairly close to the posterior abdominal wall with an obliteration of peritoneum posteriorly. Sometimes the obliteration of the peritoneal covering posteriorly does not take place and the ascending colon then is attached by a mesocolon of greater or less length, Piersol.[11]

CASE REPORTS

Case 1—*Transposition of All Viscera*—Mrs. O., age 70, mother of two normal children, was first seen November 17, 1926, with all the symptoms and signs of

an acute abscess in her left lower abdomen. The history indicated that over a period of three years short, severe, recurrent attacks of pain occurred in the same region. A physical examination indicated a transposition of the heart, stomach, and liver. An x-ray examination of the colon indicated the position of that organ transposed. On November 17, under local anesthesia, a left rectus incision was made and an appendiceal abscess was drained. The recovery from this condition was uneventful and a complete gastrointestinal study was obtained and the plates are now presented.

Case 2—This case is reviewed to show the position of the cecum in some humans soon after birth. In a small percentage of cases this position persists, due to failure to descend and rotate.

A Japanese baby, age 2 months, was first seen with an acute abdomen of a few hours' duration, and the blood picture of an acute infection. The chest was clear and it was decided to operate for an acute appendix. A small right rectus incision was made. The cecum and ascending colon were not found in the right abdomen and were only located by gentle traction upon the omentum. This brought into view the transverse colon and the cecum from behind the stomach to the left of the midline of the body. The appendix was found to be acute and was easily removed.

Case 3—Mary F., single, age 30, no previous operations, no serious illness, family history of no special interest. She presented herself stating she had been in generally good health, but had more or less constant dragging pains in her upper right abdomen, with frequent distention. This would pass and give relief, to recur constantly at longer or shorter intervals. There had been no jaundice or indication of deranged gall bladder function. A study of the case with x-ray findings led us to diagnose adhesions about the ascending colon. The operation, March 19, 1924, revealed a rather firm band attached to the ascending colon, crossing the fundus of the gall bladder and attached to the transverse colon in such a manner as to cause a pull upon the gall bladder with each distention of the colon. These bands were easily removed and raw surfaces covered. The appendix was normal but removed. Following an uneventful recovery, the patient has been free from all symptoms. This case is typical of four others in which operation showed practically the same findings.

Case 4—Mrs. F., age 51, had never been operated. For a period of about two years her chief symptom was pain about the right costal margin. This would be relieved with the subsidence of flatulence. The pain never occurred at night and she slept well. She would be free from symptoms for weeks at a time and then again have pain every day for as long as two months at a time. She never vomited, was never jaundiced. The gaseous distention at times was extreme. The symptoms could be relieved by personal manipulation of the abdomen and change of position. The character of food ingested did not alter the symptoms. The bowels were regular and no mucus or blood was found in the stools. There had never been a distinct attack of appendicitis.

An x-ray study led to a diagnosis of a "water trap" condition of the ascending colon, the picture showing the characteristic position and the meal remaining abnormally long in the ascending colon.

At operation, May 24, 1926, it was found that a band from the ascending colon held the transverse colon down along the ascending colon for about five inches. The ascending colon was dilated and the acute angles described in this condition were present. The appendix was involved and was removed. The gall bladder was moderately thickened, contained calculi and was removed. We think the changes in these organs were influenced by the chronic stasis in the ascending colon. The subsequent relief and general well-being of this patient has been most satisfactory and has been the real incentive for the preparation of this paper.

Case 5—Slides of x-ray in this case illustrate how an overdistended ascending colon, by its drag upon the root of the superior mesenteric artery, causes an obstruction of the third portion of the duodenum causing its overdistention with stasis.

Case 6—This case illustrates how bands produce a "water trap" condition in many of the patients where bands are found about the ascending colon. It also illustrates the results of neglect in these cases.

Mr. E., age 55, never seriously ill, gave a history of more or less distress in his right abdomen for twenty years; no acute attacks, no operations, but symptoms such as those described above in the consideration of bands. We saw him first in 1922 and, after a complete x-ray study, advised operation for adhesions about the ascending colon and gall bladder. He did not come for operation until August 3, 1926. During the four-year interval his symptoms grew worse and he lost forty pounds in weight. At intervals he showed moderate jaundice. At operation the findings revealed bands across the ascending colon to the transverse colon, holding that portion of the colon close down along the ascending colon in a typical "water trap" position. The gall bladder was covered by these bands and the cecum was cramped under the bands; the appendix was completely retrocecal with secondary changes. The gall bladder was filled with many small stones. We believe the changes in the gall bladder and appendix and the evidence of moderate myocarditis were largely the results of long stasis in the ascending colon. The general resistance was lowered and, while the surgical recovery progressed satisfactorily, the patient developed pneumonia and died on the eighth postoperative day.

Case 7—*Congenital Stalk*—Dr. V., age 50, had never been operated. Right abdominal distress with train of symptoms previously described existing for many years. Was operated on October 6, 1926. A congenital stalk held the midportion of the ascending colon over in a kink toward the umbilicus. The appendix was removed and the pathologist's report stated: "Subacute mucosal appendicitis, lymphoid hyperplasia and moderate degree of infiltration."

Case 8—*Postoperative Bands*—Mrs. P., age 35, operated ten years before for acute appendicitis and cystic right ovary. Since that time she had suffered with severe cramping in her right abdomen at frequent but irregular intervals. Distention of the abdomen and early vomiting ushered in these attacks. Relief was usually obtained from an active cathartic, or at times the gas would rumble through and there was instant relief. Her general health continued good. The x-ray study indicated adhesions about the ascending colon and she was operated November 2, 1926. Four distinct groups of bands were found:

1. The transverse colon was bound to the ascending colon in a "water trap" position;
2. Twelve inches of the terminal ileum were involved;
3. The sigmoid was bound to the fundus of the uterus in an acute kink; and
4. The gall bladder was normal, but held by a firm band to the second portion of the duodenum.

The patient has been entirely free from symptoms since her operation.

Case 9—*A Long Mesocolon*—This case was typical of a series of cases we have had where amebic colitis had not yielded to treatment because of mechanical obstructions.

Mrs. F., age 42, never seriously ill. She had been treated for amebic colitis for many months; and the coccyx had recently been removed for pain in that region. Her abdominal symptoms were distressing, variable and indefinite. The chief symptom was a gurgling in the left pelvis. An x-ray study indicated a displaced ascending colon. There was an indefinite tenderness in the left pelvis, and a soft mass could be palpated. Was operated on October 22, 1926. The ascending colon was found attached by a mesocolon long enough to permit the cecum and appendix to be bound down to the rectum in the left pelvis The appendix was removed, the pathologist's report stating: "Chronic appendicitis with lymphatic overgrowth." A

colopexy was performed on the ascending colon and the uterus held up by a Gilliam operation. The patient has done well, is practically free from her former symptoms, and the colitis is clearing up.

CONCLUSIONS

When operating in a non-acute abdomen a routine inspection of the ascending colon for abnormalities, faulty positions, and constricting bands, should be made.

These abnormalities lead to symptoms and changes in neighboring organs, obscuring the original and chief cause of the trouble.

Deforming conditions of the ascending colon, when left untreated, lead to unsatisfactory results and reflect upon the surgery performed.

412 West Sixth Street.

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DISCUSSION

Andrew Stewart Lobingier, M. D. (716 Merritt Building, Los Angeles)—In most of the acquired adhesions the primary focus of infection is the vermiform appendix. Either through the lymph channels or the portal circulation bacteria lodge in the subserous reticular zone at the hepatic flexure, setting up a slow subacute inflammatory change. This is characterized by round cell infiltration and connective tissue proliferation, resulting in adhesions and deformity of the colon channel. These kinked and angled conditions are accentuated by omental adhesions which may extend to the border of the right lobe of the liver, to the gall bladder, or the duodenum. We may not only have interference with the colonic current and the discharge of bile, but obstruction at the pylorus, with mucous colitis and symptoms of pylorospasm.

We wrote on this subject fifteen years ago, reporting six cases of obstructive adhesions at the splenic flexure as well as a number at the hepatic flexure. These were among the first cases of *membrana pericolica sinistra* which had been noted. For obvious reasons they are much less common than the adhesions at the hepatic flexure.

Doctor Collins very properly calls attention to the common oversight in not including a wider area of inspection when the appendix is operated on. In a large number of cases the appendix has been the original source of the resulting pathology, but its removal can only be an incident in correcting the symptom complex which arises from the distortion of the ascending and transverse colon. Moreover the internist should realize how fruitless it is to attempt to treat cases of mucous colitis or an inactive colon without first having these adhesions freed surgically.

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Alanson Weeks, M. D., and G. D. Delprat, M. D. (384 Post Street, San Francisco)—Doctor Collins remarks on the fact that pathology in the form of constricting bands or adhesions about parts of the alimentary canal is frequently overlooked, and secondary pathological foci are attacked by the surgeon, while the primary condition is not recognized. There is only one answer: adequate and thorough exploration. We have long advocated the long right rectus, or pararectus incision instead of a small incision, such as the McBurney. It is to be deplored that surgeons still pride themselves on "doing an appendectomy" through a one and one-half inch incision. Such small scars on the abdomen spell incomplete and inadequate exploration.

Of the symptoms caused by anomalous bands in the abdomen, whether of the upper abdomen or elsewhere, there can be no doubt. We have seen too many cases relieved by the section of such adhesions, and have this week presented a paper illustrating several types of such cases.

As Doctor Collins has stated, anomalous bands of the intestine cause stasis and putrefaction. When it is recalled, as Dr. B. W. Williams of London has shown, that the colon harbors anaërobic bacteria as part of the natural flora and that the growth of these organisms, with the liberation of their toxins, is particularly accelerated with obstructions of the bowel, whether partial or total, one can readily understand and interpret the misery of these patients

The cooperation of a competent roentgenologist is of great value in preoperative diagnosis of these conditions. He must be trained, however, to look carefully for areas of constriction and deformities and interpret them correctly. Too frequently in the past has some such report as "some lack of mobility of the cecum" been accepted at its face value instead of stimulating inquiry into the cause of the restricted motion of that structure.

Especially should we remember that surgeons who were the most ardent supporters of Lane's removal of the large bowel have all gradually stopped the radical procedure because they have been reasonably well satisfied with the results they obtain by searching for and removing causes of poolings in this structure.

Do not expect too rapid results from the relief of bands. It may take some months before this type of chronic invalid arrives at the stage of complete recovery. Remember also that the chronically inflamed bowel with its abnormal bacteria should receive the proper attention of a medical man who will carefully watch and change the diets as required.

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Edmund Butler, M. D. (490 Post Street, San Francisco)—Doctor Collins early in his paper made the statement: "The object of this paper is to attempt to show that the ascending colon is responsible for many of the symptoms for which other organs have been condemned."

It is my opinion that most of the symptoms producing adhesions and deformities of the colon are due to inflammatory processes in the gall bladder, liver, appendix, mesenteric lymph glands, or are congenital. If secondary to extrinsic inflammatory processes, then the primary exciting factors must be properly taken care of, as well as the releasing of adhesions. This fact is well emphasized by Doctor Collins' case reports, in most of which sufficient pathological findings were recorded to account for the symptoms without ascribing undue importance to the ascending colon.

The ascending colon should not be suspected until a careful check has been made upon the other structures that may cause right abdominal signs and symptoms.

The radiologic evidence of disturbed peristalsis of the ascending colon is difficult to elicit, for unless the interpretation is made by a thoroughly trained clinician who specializes in radiographic diagnosis the opinion is valueless.

Arthritis is undoubtedly influenced by abnormalities of the ascending colon, but these conditions do not improve following operation alone. A carefully planned dietetic and eliminative therapy extending over the remainder of the patient's life also must be carried out.

Doctor Collins is to be commended for so vividly arousing our interest in the large bowel, particularly

the ascending colon. No exploratory laparotomy should be completed without a careful search for abnormal conditions affecting this portion of the intestinal tract.

THE COMMONER TYPES OF GOITER—CLINICAL AND PATHOLOGICAL CLASSIFICATION*

WITH NOTES ON PREVENTION AND TREATMENT

By D. Schuyler Pulford, M. D.
Woodland

INTRODUCTION

THE recognition of a goiter-bearing patient is not always easy, nor is the classification of that goiter always so simple. Clinicians and surgeons as a whole often fail to distinguish exophthalmic goiter from adenomatous goiter with hyperthyroidism (toxic adenoma) and the relationship of the adenomatous goiter with hyperthyroidism to the adenomatous goiter without hyperthyroidism is not sufficiently emphasized even today in the non-goitrous districts. The proper treatment of thyroid disease depends upon the recognition of the type of goiter in question. Failure to recognize that there are several kinds of goiter has resulted in much harm and an occasional unnecessary death.

While it should be emphasized that the recognition and classification of goiters must, in the last analysis, be from clinical signs and symptoms backed up by careful basal metabolic rate tests; nevertheless there is a definite gross and microscopic pathological picture which varies with the different types of thyroid disease. The different histopathologic picture may be the tissue explanation of the different chemistry of toxic adenomata and exophthalmic cases as shown by the different response to Lugol's solution.

The object of this paper is to call attention to a simple, workable, clinical classification of diseases of the thyroid gland correlating the pathology of the removed glands with the different clinical types insofar as that is possible, and to set down a few short notes on diagnosis, prevention, and treatment of the commoner types of goiter.

HISTORY

Mobius [1] in 1887 suggested that the clinical symptoms of Basedow's disease were due to an abnormally increased activity of the thyroid gland. Greenfield [2] in 1893 was the first to demonstrate this relationship by showing hypertrophy and hyperplasia in the thyroid gland of six typical cases of what is now called exophthalmic goiter. In 1910 Kocher [3] practically differentiated true Graves' disease and adenomatous goiter with hyperthyroidism when he collected and described a large group of patients showing different reactions to iodin administration. He failed, however, to separate the groups clinically. It is interesting to note that Aschoff,[4] independently of Kocher and Plummer, also made a distinction between these diseases from the pathologic study of excised goiters. Since 1911 Plummer[5] has repeatedly emphasized and maintained that there were two separate and distinct types of hyperthyroidism, each associated with a distinctive pathologic change in the thyroid gland. In 1913 Doctor Wilson [6] reported that in exophthalmic goiter cases as described and diagnosed by Plummer, the thyroid always showed histologically parenchymatous hypertrophy and hyperplasia. Plummer's clinical observations were corroborated by Kendall's [7] chemical studies on thyroxin. Dubois [8] in 1916 published extensive observations on the basal metabolism rate in goiter patients, and Boothby [9] showed the indirect gasometer method of calorimity in estimating metabolism, a practical help in the diagnosis and treatment of thyroid diseases.

The two most important and recent advances in the handling of thyroid disease have been the use of iodin in the treatment of exophthalmic goiter, revived and rationalized by Plummer's convincing separation of exophthalmic goiter and toxic adenoma groups, and the use of x-ray in goiter treatment.

CLASSIFICATION (WITH SYNONYMS)

Goiters may be conveniently divided as follows (modified from Plummer):

1. Diffuse colloid goiter (simple-adolescent-colloid hypertrophy).
2. Adenomatous goiter, without hyperthyroidism (non-toxic adenoma).
3. Adenomatous goiter, with hyperthyroidism (toxic adenoma).
4. Exophthalmic goiter (Graves' or Basedow's disease), (hypertrophic parenchymatous thyroid).
5. Mixed type of hyperthyroidism (a combination of toxic adenomata and exophthalmic goiter).
6. Myxedema.
7. Cretinism.
8. Thyroiditis.
9. Malignant disease.

By far the most common types encountered are the first five of these diseases. We shall confine our remarks to them. It should be emphasized at the onset that the most important point in the clinical classification of goiter revolves about Plummer's well-established differentiation between true exophthalmic goiter and the toxic adenomatous goiter.

DIAGNOSIS

Goiter diagnosis is one of the most, if not the most, difficult diagnostic problem which confronts the internist and surgeon today, especially in the non-goitrous districts. It is really only a very careful study of disease for years that enables one properly to diagnose and treat these cases. So it is that without that experience a properly controlled and operated basal metabolism rate station is the most valuable single factor in recognition and management of these diseases.

A. *Simple Colloid or Adolescent Goiter*—This type of goiter is most commonly seen in young people between the ages of 12 and 25. The thyroid enlargement is uniform, smooth thyroid-shaped and without palpable nodules. These goiters do not show signs of toxicity, the basal

* Read before the Annual Meeting of the Nevada State Medical Association, September 23, 1927.

metabolic rate being normal. They become bothersome from pressure, if large, and are in some cases quite disfiguring. They are considered physiologic in a way and tend to disappear spontaneously.

B. *Adenomatous Goiter Without Hyperthyroidism (Non-toxic Adenoma)*—In adenomatous goiters the thyroid presents an irregular, nodular enlargement. They are usually soft, though calcium deposit in a cystic adenoma may feel stony-hard like cancer, or an associated thyroiditis or hemorrhage may make the gland hard in consistency. The patients are usually 35 to 45 years of age, having had enlarged thyroids on the average for sixteen years before presenting themselves for treatment. The adenomata sometimes become very large with a tendency to interfere with respiration by pressure upon the recurrent laryngeal nerve and upon the trachea. They are sometimes substernal. Neither the vascular nor the nervous symptoms of hyperthyroidism is noted; the basal metabolic rate is normal. Their greatest danger is their tendency to become toxic, and if given iodin they will do so.

C. *Adenomatous Goiter with Hyperthyroidism (Toxic Adenoma)*—Toxic adenoma patients present themselves during middle life with a history of having had goiter for many years, but for the last few months an increasing weakness. The heart has become troublesome, the pulse rate rapid and perhaps irregular, and there may be shortness of breath on exertion and swelling of the feet. There is considerable nervousness and tremor, though these symptoms are more prominent as a rule in the exophthalmic type of goiter. It is most important to recognize that there has been a slow, steady development of these symptoms without remission. The basal metabolic rate is high, though not as a rule as high as in a "well-trained exophthalmic goiter case." The gland feels hard, but thyroiditis and carcinoma are likewise hard. The blood pressure varies from 160 to 180 systolic and from 80 to 90 diastolic with a pulse rate at rest of about 90 to 110. In the cases with cardiac decompensation, however, the rate may be very rapid and irregular from auricular fibrillation. We have a pulse pressure greatly increased, while in essential hypertension the diastolic blood pressure is elevated also, say with a reading of 180/110. There is a tendency to hypertension not seen in exophthalmic goiter (Plummer [10]). There is loss of weight although the patient has a good appetite. A "neuro" has a poor appetite, capricious, and does not lose weight. Excessive normal thyroxin output increases the basal metabolic rate. These toxic adenomata are nodular and, although hard, not so vascular as the exophthalmic goiter and, therefore, less often do we hear a bruit. Exophthalmos is never present in a purely adenomatous type of thyroid. Auricular fibrillation, dyspnea, and edema, may be present. About one in four cases usually shows auricular fibrillation, which disappears in most cases about two to three weeks after the operation. Some of these toxic adenomata produce serious vital organ degeneration without showing nervous symptoms. Colloid or non-toxic adenomata in neurasthenic people are often mistaken for hyperfunctioning goiters.

D. *Exophthalmic Goiter (Graves' or Basedow's Disease, Hypertrophic Parenchymatous Thyroid, Exophthalmic Goiter of Plummer)*—In exophthalmic goiter there is a sudden onset with a fluctuating course. The patient may be any age, but usually between 20 and 40. The disease runs in families and these patients are often optimistic, like tuberculosis subjects. There is a history of recent enlargement of the neck and a train of characteristic nervous symptoms, the latter often making their appearance before the former. The goiter is thyroid shaped, symmetrically enlarged, vascular, and smooth, unless adeno-

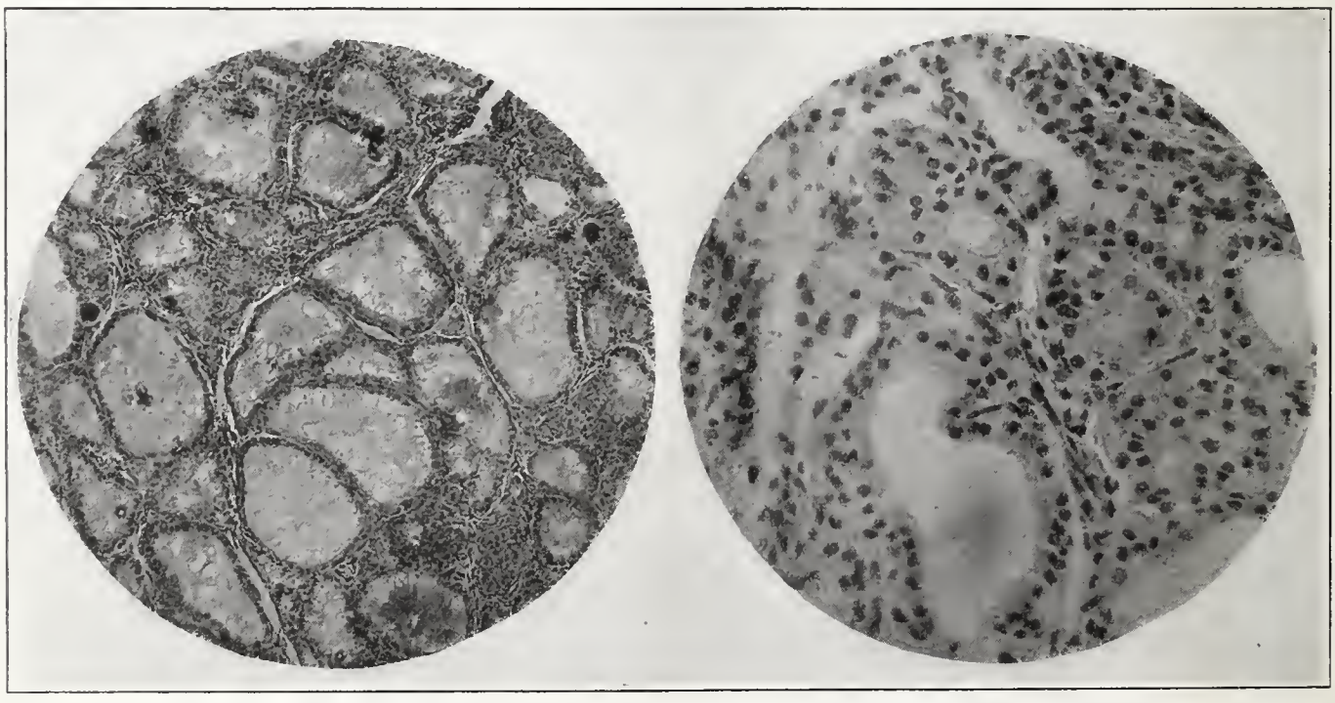

Fig. 1—Simple colloidal goiter.

Fig. 2—Parenchymatous hypertrophy. Solid area with columnar cells.

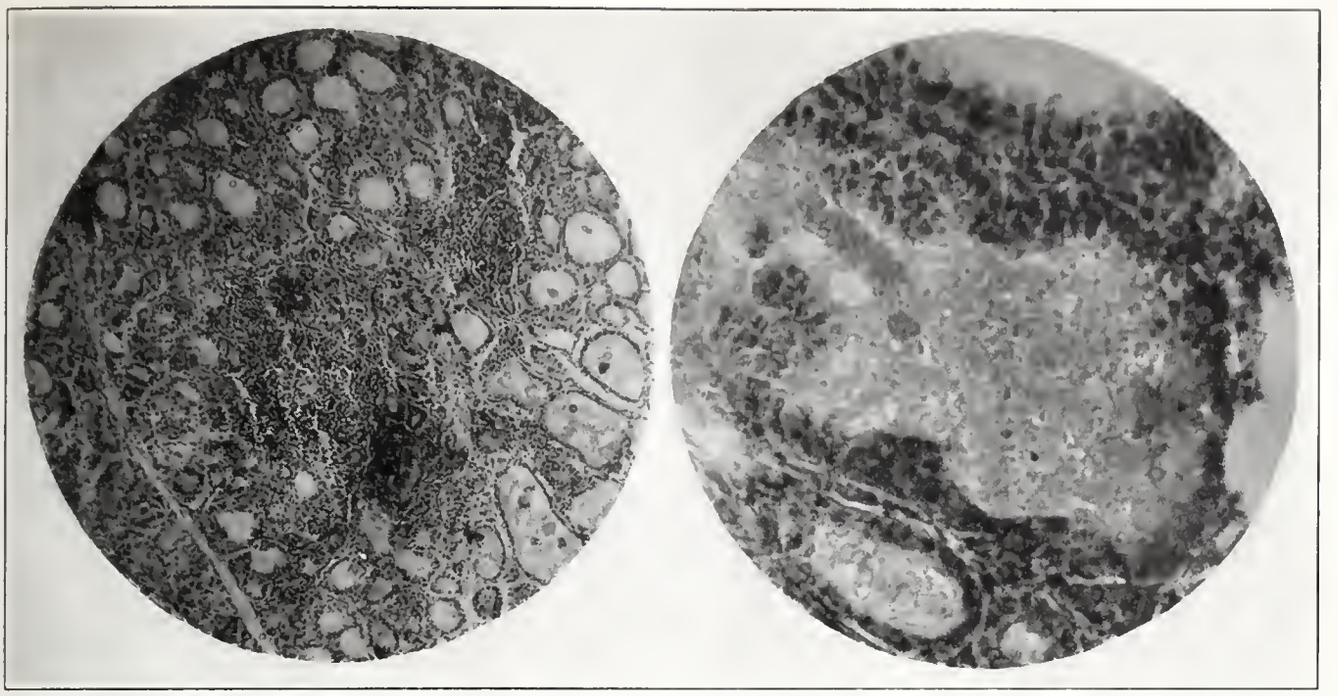

Fig. 3—Associated thyroiditis.

Fig. 4—Epithelia; cells desquamated into acini and colloid replacement in a hyperplastic area. Advanced stage of desquamation of cells and colloid replacement.

mata are present. The gland feels quite hard in the toxic cases. A bruit is often present; in 90 per cent of three-year cases and 80 per cent of three-month cases.[11]

The patient presents marked symptoms of nervousness and heat intolerance; less bed clothes are needed and also a lower room temperature. Tremor, tachycardia, perspiration, and muscle weakness are present. Exophthalmos is noted in the vast majority of cases, though true exophthalmic goiters can be present with a negligible degree of protrusion of the eyeballs. A large appetite with a concomitant loss in weight is characteristic—the "neuro's" appetite is variable and there is seldom marked weight loss. In young people the blood pressure may be 140/60. In patients over 40 it is usually 160/80 or higher. Note the high pulse pressure, the difference between systolic and diastolic. There is no tendency to hypertension. There may or may not be fever. The fingernails tend to separate from the matrix for an abnormal distance. Characteristic crises occur in which there is great weakness, nervousness even to dementia and associated nausea, vomiting, and diarrhea. Such crises occur much less frequently in toxic adenomata, but are often seen when there is an associated parenchymatous hypertrophy, extra-adenomatous. Some cases show jaundice from toxic hepatitis. Basal metabolic rates are useful in checking one's clinical judgment of the patient's condition. With an accurately controlled machine, the basal metabolic rate is of the utmost help in separating the nervous cardiac patient and the neurasthenic type from the true hyperthyroidism patient.

E. *Mixed Type of Hyperthyroidism* — The greatest difficulty in classification, diagnosis, and treatment lies in the mixed type of goiter with adenomata present in an exophthalmic goiter or in adenomatous goiter with an associated parenchymatous hypertrophy as in exophthalmic goiter. It must be because of the frequency of this type of disease that conflicting reports are heard regarding the efficacy or harm of Lugol's solution and why it is being recommended more and more for both types—exophthalmic goiter and toxic adenomata cases. This also may explain why prolonged use of Lugol's solution even in what is thought to be clear-cut exophthalmic goiter, does not permanently cure and really does harm, for with adenomata present, buried beyond recognition, we see iodin accentuating hyperthyroidism after the first preliminary short benefit. The symptoms and signs of these cases are a mixture of the toxic adenoma and the exophthalmic goiter patient with either one or the other predominating.

PATHOLOGY

Before discussing the treatment of the different types of goiter it is well to review their pathology, for here again the tissue changes underlying the different clinical pictures lend a guiding hand in treatment as well as prognosis, especially if the clinical diagnosis has been in doubt.

It should be emphasized at the start, however, that one cannot always tell from the examination of the tissue just what clinical state of toxicity existed in the patient at the time of thyroidectomy. This is particularly true of the adenomatous type of goiter with hyperthyroidism. Then again the histologic picture of the gland in cases receiving iodin for several weeks often shows involution changes, so marked that the diagnosis of exophthalmic goiter or of parenchymatous hypertrophy in an adenomatous goiter from tissue alone is difficult. A pathological classification, however, is useful and will definitely separate the adenomatous and the exophthalmic goiter disease groups. Let us look at them first from the gross, and then, the microscopic standpoint. In the gross alone there really are but three types of glands.

First, the smooth, thyroid-shaped or so-called butterfly goiter seen in simple colloid or adolescent cases and in the true exophthalmic or Graves' disease. Second, the nodular, irregular thyroid of the adenomatous group, toxic or non-toxic. Third, the mixed type, which, however, cannot be told in the gross before section. On section, in the gross, the cut surface in the colloid goiter is, as the name implies, glairy, sticky, and jelly-like, gray in color and with varying amounts of stroma and colloid. The exophthalmic type has a meaty appearance with little or no colloid escaping from the cut surface, unless Lugol's solution has been given for a few weeks. The color is that of partly cooked beef. The nodular, irregular, lumpy adenomatous type of goiter on gross section presents a varied picture, depending upon the admixture of varying amounts of colloid material, stroma, and the product of hemorrhage with its cyst formations and degeneration. Large collections of colloid substance surrounded by fibrous tissue envelopes are characteristic, and it is the hemorrhage into these that gives varying degrees of degeneration with ultimate fibrosis, hyalinization, and even calcification. The mixed type contains, as the name implies, varying amounts of adenomata and solid homogeneous tissue.

Microscopically there are five fairly distinct types of goiter, which, however, are usually confusing because of a tendency for two types to be present in one gland.

1. Simple, colloid or adolescent goiters show the enlargement due to an increased amount of colloid stuffing the acini and flattening out the epithelial cells. There is little cuboidal and no columnar epithelium. The gland is not vascular.

2. Exophthalmic goiter (Graves' disease) shows microscopically a marked hypertrophy of the epithelial cells lining the acini, changing the normal cuboidal or flat cell into a tall columnar affair. It is well to distinguish between hypertrophy as used here applied to epithelial cells, from the so-called hypertrophy of colloid material in simple goiter. There is also a multiplication of the number of cells or a true hyperplasia. The acini are small and their lumina contain little or no colloid material. There are, however, numerous fields of hypertrophied parenchymatous cells projecting into the cavity of the acini. The lymphatic and blood vessels are distended. Lymphocytic infiltration is a feature in most cases and it is thought indicative of a certain amount of thyroiditis. An estimation of the amount of thyroiditis may be helpful in prognosis, as it has often been noted that the gland with an excessive associated thyroiditis is the one about to go on to hypothyroidism postoperatively. The involution changes mentioned above after Lugol's solution have been well described among others by Rienoff [12] and Giordano,[13] and are as follows: Colloid material dilates the acini, producing a cystic condition so that the epithelial lining of the acini changes from a tall, columnar to a cuboidal or even flat type. The infoldings in part disappear and masses of cast-off degenerating epithelial cells may be seen in the acini. There is a relative increase in fibrous tissue. However, there are usually present some areas of the gland which show true parenchymatous hypertrophy from which a diagnosis may be made.

3. Adenomatous goiter, non-toxic. Microscopically the non-toxic adenomata show many areas little different from a normal thyroid and in other areas flattening and even absence of the epithelium lining the colloid or hemorrhage-stuffed acini. Masses of undifferentiated fetal cells abound in almost all adenomatous goiters.

4. Adenomatous goiter, toxic. This gland differs from the non-toxic in one respect only and that is that it contains certain areas of hypertrophy of the parenchymatous cells lining the acini with a change from flat or cuboidal to a columnar type of cell and with infoldings of these enlarged cells into acini even as is seen in exophthalmic goiters.

This is the type of goiter in which the pathologic tissue picture is less apt to mirror accurately the clinical condition of the patient. Although the microscopic picture of the gland at times shows associated parenchymatous hypertrophy in a degree comparable to the toxic state of the patient, it does not always give one an accurate estimation of the state of clinical toxicity.

5. Mixed type. The mixed type of gland shows either a predominantly adenomatous type with an associated parenchymatous hypertrophy either intra- or extra-adenomatous or a true exophthalmic goiter type with adenomata buried in its substance. The mixed type of gland with adenomata buried in hypertrophic parenchymatous tissue or the exophthalmic with associated adenomata is often correctly diagnosed by the pathologist, but the clinical state of toxicity is here again difficult to predict. The giving of Lugol's solution for long periods preoperatively makes the pathologic differentiation of the excised glands more difficult than formerly.

To sum up the pathology, then: The simple colloid and the exophthalmic goiter glands are accurately recognized. The nodular adenomatous goiter, be they toxic or non-toxic, fall into one group. In the gross, differentiation between these two is not possible, and in the microscopic study, though in a fair percentage of cases a pathologist can pick out the toxic cases, the general average of correct diagnoses is not sufficiently high for practical purposes.

PREVENTION

Before taking up the treatment of goiter it is well to say a few words about its prevention. This is, of course, accomplished insofar as our present knowledge permits in the judicious use of iodin. Remember that the cause of goiter is as yet not known. McCarrison [14] has shown through feeding experiments that iodin deficiency is the chief known factor involved in goiter production. He states that it is either a breakdown in assimilation in the intestinal canal and cites fecal bacterial contamination in unhygienic conditions as a cause of iodin deficiency or a breakdown in utilization of iodin by thyroid or body cells after absorption. The lack of iodin plus the

unknown "X" then gives a colloid goiter. Iodin is given to prevent this. If colloid is already laid down, thyroid extract enough to bring metabolism to normal is given to dissolve the colloid.

Iodin is given as prophylaxis hesitatingly in some instances, for fear of causing a normal gland to "hyperfunctionate." No amount of iodin will do this. If harm is done, you may be sure small unrecognized adenomata were present to be whipped into action. It should never be prescribed prophylactically in the presence of adenomata. Marine and Kimball[15] have shown in school children in Akron, Ohio, that the danger of giving iodin to children in this country is negligible, even if a small colloid goiter is present. This holds up to the age of 20. The older the patient and the larger the goiter the more likely is the gland to contain adenomatous tissue, although palpation may fail to reveal its presence, and the more danger in giving iodin.

Iodin administration affecting an entire community such as iodized salt or an iodized water supply seems quite inadvisable because of the certainty of producing hyperthyroidism in quiescent adenomata present in a colloid or otherwise normal thyroid gland. Prophylactic measures should apply particularly to children and consist in giving iodin in the form of sodium or potassium compound in the amount of one-tenth grain once a week between the ages of 11 to 17, as recommended by Marine. It is important to give childbearing women of goiter families prophylactic iodin also, for this prevents goiter both in the mother and the child.

To repeat, then, iodin as a preventive measure against goiter, is absolutely safe for children who do not have goiter. It is quite safe in children with small colloid goiters up to the age of 20. For patients over 20, for young patients with large goiters, or for those in whom nodules can be felt, it should not be given or hyperthyroidism might result.

TREATMENT

Let us emphasize again that the proper treatment of thyroid disease depends upon the recognition of the type of goiter in question. The different types are treated as follows:

1. *Simple Goiter (Colloid)*—Treatment is medical unless adenomata or toxicity develop, and consists in the administration of small doses of iodin to the small and early cases and desiccated thyroid to the larger ones of long standing. Iodin alone will not always produce absorption of colloid already laid down. In giving thyroid extract symptoms of increased basal metabolism must be carefully watched for and, if practicable, basal metabolic rate estimations done from time to time. Remember that the effect of desiccated thyroid or thyroxin is cumulative—the one day's dose often reaching its maximum effect a week later, and taking two to three weeks to entirely pass off. Nervousness, tremor, palpitation, and tachycardia are early symptoms of overdose and if the drug is continued, headache, pains, and aches in the muscles and bones with loss of appetite and nausea follow.

2. *Adenomatous Goiter Without Hyperthyroidism*—It is safe to say that one in four,[16] 25 per cent, of this type of goiter becomes toxic after the age of 35. They should therefore be considered surgical if the adenomata reach three-fourths of an inch or more in diameter and if the patient is over 30 years of age. It is because adenomatous goiters tend to recur, if removed at an early age, that we delay operation to age 25 at least. Disfigurement and pressure symptoms also call for operation. Iodin should never be given.

3. *Adenomatous Goiter with Hyperthyroidism*—It is because the symptoms of hyperthyroidism in these cases are due to the fact that the goiter has begun to throw out into the circulation an increased amount of normal thyroxin that iodin is not required. Lugol's solution is given, however, for a few days previous to operation for fear of there being unrecognized, associated parenchymatous hypertrophy which might throw the patient into a postoperative crisis, if iodin were not given. All cases are considered surgical, if patient is over 25 years of age, which procedure is curative provided the adenomata are removed before vital organ degeneration has progressed to any extent. Recurrence is rare if the operation has removed all adenomata. Cardiac symptoms predominate, but often clear up on rest in bed alone without giving digitalis. If the cardiac decompensation and auricular fibrillation persist, a digitalis compound may be given. However, it is well to discontinue it for a few days before operation. It seems fair to suppose that quinidin may be substituted for digitalis at this stage.

4. *Exophthalmic Goiter (Graves' Disease)*—Operation is indicated if the patient is seen before or after a crisis, but never during one. Rest in bed and Lugol's solution are usually all that is necessary to prepare most patients. Basal metabolic rates are necessary in checking one's clinical judgment of the patient's condition. All cases should be operated upon after appropriate preoperative treatment, if aged 25 or over. If another surgical condition is present, thyroidectomy should be done first unless it is an emergency, such as ruptured appendix, duodenal ulcer, or some such catastrophe.

There is about a five per cent chance of recurrence which might make a second operation necessary or the use of x-ray treatment advisable. It has not yet been demonstrated that iodin actually cures exophthalmic goiters. Doctor Boothby[17] says: "The drug improves and apparently holds in abeyance the nervous, mental, and gastro-intestinal symptoms which are so characteristic of exophthalmic goiter. It also prevents the development of the fatal postoperative exophthalmic goiter crisis. The metabolism is remarkably decreased in about one-third of the cases, somewhat less markedly affected in another one-third, while in the remainder, no demonstrable effect in the metabolism is produced. In general, therefore, according to the evidence available at the present time, iodin should be advised with few excep-

tions, only as a temporary therapeutic measure, in the treatment of exophthalmic goiter to bring the patient into a safe condition for a partial thyroidectomy."

5. *Mixed Type*—According to our classification this is a toxic goiter and should be treated surgically after appropriate preoperative preparation. Lugol's solution is indicated, for as the name implies, part of the hyperthyroidism is due to iodin-deficient secretion of the hypertrophic parenchymatous part of the gland. Iodin does not cure.

PREOPERATIVE TREATMENT

The principles of this treatment consist in restoring body fluids, replacing reserve glycogen and body weight, and increasing hemoglobin and reducing nervous tension.

This is accomplished by giving a high caloric diet, 3000 to 5000 calories, dependent somewhat upon appetite, forcing fluids, saline and glucose solutions by subcutaneous proctoclysis, or intravenous routes, and occasionally by giving transfusions. Crile [18] has shown that transfusions of whole blood not only improve hemoglobin and increase body fluid, but have a very beneficial effect on a goiter toxic patient's nervous syndrome. I have found that the administration of salt solution intravenously seems to benefit very sick patients more quickly if given slowly and repeatedly in large amounts than when given by the subcutaneous method. Glucose solutions should also be administered this way. Sedatives are given freely. Patient should rest but not be made bedridden, being allowed up as much as possible.

LUGOL'S SOLUTION

The exophthalmic goiter is the type par excellence which requires iodin in its treatment, for, as Kendall [19] has shown, the thyroid gland is throwing into the circulation an excessive amount of abnormal thyroxin whose molecule is deficient in iodin. The exophthalmic goiter patient needs iodin. Iodin is administered preferably in the form of Lugol's solution, which is the U. S. P. Liquor iodi compositus. It contains 5 grams of iodin and 10 grams of potassium iodid in 100 cc. of water. In each cc. of the solution there are 126 mgm. of iodin; in 10 cc. 78 mgm. or 1.2 grains. If the patient vomits Lugol's solution, repeat the dose immediately and repeatedly until it is retained. Patients soon tolerate it. It may be given in subcutaneous fluids, by rectum, or even by duodenal tube. It is best given in the average case in grape juice, and in amounts of ten to forty drops three times a day, depending upon the toxicity of the patient. Too much is rarely, if ever, given and often a far too small amount is tried. Its beneficial effect starts in from two to four hours and lasts eight to ten days, stopping the extreme nervousness and vomiting following crisis. However, the basal metabolic rate does not start down until from eight to fourteen days. Lugol's solution is given for a short period preoperatively to exophthalmic goiter patients, and postoperatively for two or three months in the very toxic cases. It may be used as a diagnostic test, for if given for two weeks preoperatively with failure to reduce the pulse rate and the basal metabolic rate, as it usually will in a pure exophthalmic case, you are dealing with a toxic adenomata or a mixed type of case. It is well to give a large dose of Lugol's solution per rectum for several doses in a case of exophthalmic goiter in crisis with vomiting. No discussion of the use of Lugol's solution is complete without emphasis of the note of warning resounding from all sides that the indiscriminate use of iodin for long periods of time in almost any type of goiter is doing untold harm to many patients. The lay public is grasping at Lugol's solution as a panacea for all goiter disease. Doctors should prevent this.

POSTOPERATIVE TREATMENT

This consists in a continuation of medical regimen as outlined preoperatively with addition of more sedatives and for a time increased amounts of Lugol's solution. Morphin sulphate may be used freely. Special alertness must be exercised by the attending physician to recognize and appropriately handle the many postoperative complications which may arise, such as infection, tracheitis, laryngitis, tetany, and cardiac decompensation, and especially a rapidly developing bilateral hydrothorax. The avoidance of operative and postoperative deaths and complications depends upon a painstaking and conscientious cooperation between the surgical, medical, and laboratory services. Such teamwork is essential to the proper handling of toxic goiter patients. This is seldom available outside of the large hospital or clinic.

OPERATIVE INDICATIONS

The indications for operation are:

1. Increasing quadriceps power.
2. Gaining weight.
3. Lessened nervous instability.

It is best if the basal metabolic rate is reducing, but this is a variable factor. Always operate upon the thyroid first if disease is present in some other organ also. Secondary infections in toxic goiters subside on Lugol's solution. It is well to double the dose of Lugol's solution the day preceding, during, and after an operation.

X-RAY TREATMENT

At present the x-ray treatment of goiter is where its surgical treatment stood twenty years ago. Sufficient statistical material on treated cases is not yet available for a just comparison with those treated by surgery. Until x-ray has proven of more definite value it seems fair to state that it should be used in cases under twenty years of age, very early cases, and in a selected group of cases where for some reason operation seems inadvisable, and postoperatively where further destruction of gland tissue is needed.

It should be borne in mind that even surgical treatment is but one of the many steps in the successful treatment of a goiter-bearing patient, which if undertaken alone without pre- and post-

operative medical and laboratory supervision, will often result disastrously.

SUMMARY

1. The most important point about thyroid disease is recognizing goiter early before vital organ degeneration has taken place.

2. Next we must accurately differentiate the type of goiter and the degree of hyperthyroidism present in order to give the proper treatment.

3. The commoner types of goiter are:

(a) Colloid goiter (simple colloid hypertrophy, adolescent, diffuse colloid).

(b) Adenomatous goiter without hyperthyroidism (non-toxic adenoma).

(c) Adenomatous goiter with hyperthyroidism (toxic adenoma).

(d) Exophthalmic goiter (Graves' or Basedow's disease (hypertrophic parenchymatous thyroid).

(e) Mixed goiter with hyperthyroidism.

4. Pathologic tissue examination divides the commoner types of thyroid glands into simple colloid goiter, exophthalmic goiter, adenomatous goiter and a combination of the last two, but fails to indicate accurately the clinical state of the patient in adenomatous goiter; *i. e.*, toxic or non-toxic, in a sufficiently high percentage of cases for practical use.

5. The administration of Lugol's solution produces a cystic and colloid replacement of the hyperplastic and hypertrophic parenchymatous cells in both toxic adenomata and true exophthalmic goiter glands.

6. Prevention of goiter by iodin administration is absolutely safe for school children, but dangerous for older people who may have adenomata in their thyroids. Therefore it should be given individually and not wholesale as in iodized salt or water.

7. Lugol's solution does not in itself cure exophthalmic goiter, being merely the most important adjunct to surgery or x-ray treatment. It should never be given to patients having non-toxic adenomatous goiters, but should be given to those who suffer from the adenomatous goiters with hyperthyroidism, and to patients with the mixed types, for a few days preoperatively for fear of an associated parenchymatous hyperplasia and hypertrophy.

8. A careful and conscientious cooperation between the surgical, medical and laboratory services is essential to the proper handling of thyroid disease, and such teamwork is seldom available outside of the large hospital or clinic.

9. A properly conducted and controlled basal metabolic rate machine is essential to the proper handling of disease of the thyroid unless one has had years of experience with such patients.

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UNILATERAL SIGHTING*

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Discussion *by Roderic O'Connor, M. D., San Francisco; Frederick C. Cordes, M. D., San Francisco; P. Obarrio, M. D., San Francisco.*

A REVISION of the current explanations of the physiological and optical phenomena of binocular vision is resulting from the recent work of Parson [1] and from that of the author,[2] on eyedness and handedness.

Sheard [3] says, in discussing this work editorially, "Our clinical tests upon the elements of convergence, fusion powers and muscular insufficiencies are based upon the principle of triangulation, in which the line joining the nodal points of the two eyes—or interpupillary distance—serves as the base of the triangle, while the point of fixation is made to lie on a line drawn as perpendicular bisector to the base line so that the distances from the nodal point of each eye respectively to any point on the median line are equal. Binocular single vision is thus graphically diagrammed and discussed as though each of the two eyes was equally dominating and directing

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and that, as a result, the most accurate fixation, from the standpoints of ease, comfort and proper location in space of any object, would occur if the object fixed was located on the median line perpendicular to the ocular base line so that equal amounts of accommodation and equal amounts of actual turning in or convergence of each eye should be involved. In the bulk of cases no such ideally simple arrangement exists and equal division of labor probably is not present. In cases of right-eyed dominance simple tests show that, ordinarily, the object fixed is definitely located and sighted by the right eye, and that the visual triangle, insofar as binocular single vision is concerned, is a right-angled triangle with the right angle subtended at the nodal point of the right eye. The angle merely is reversed in left-eyedness.

The comparative constancy of this relation which exists between the right eye and hand, and the left eye and hand, in spite of binocular vision and of the projection of both maculae into both hemispheres of the brain, justly has provoked great speculative interest.

Many untenable explanations have been given, but the opinion usually held was that we are right-eyed because we are right-handed. Gould,[4] in 1908, put forth the idea, widely accepted at the time, that "handedness depends upon which is the better-seeing eye." Parsons (q. v.), who is drawn upon freely here, took the subject out of the realm of speculation and for the first time placed it upon its factual feet by his demonstration of the optical necessity for unilateral sighting. He concluded that "handedness is caused by a functional limitation of binocular vision which necessitates the exclusive use of one eye for all sighting or aiming operations and therefore for many of the most important manual activities. The fact that these visual operations are carried on monocularly leads inevitably to the preferred use of one hand—the hand nearer the sighting eye" for the greatest anatomical and physiological advantage. "Every consideration of speed, accuracy and economy of muscular effort demands this intimate correlation of eye and hand on the preferred side."

It was my privilege to extend and amplify Parson's basic work by an independent and equally basic study [2] of the effects which eyedness, and posture [5] resulting therefrom, produce in the position, muscular behavior and refractive state of the eyes, and of the greater susceptibility to refractive and pathological change seen in the non-fixing eye. Four groups of dextrals and sinistrals were identified in this study: (1) The pure dextral is right-eyed and right-handed. The left eye is cyclophoric and diverges when a test object is brought nearer than the convergence near point. About 76 per cent are pure dextrals. (2) The pure sinistral includes 9.3 per cent and is left-handed and left-eyed. The right eye is cyclophoric and diverges in the near test. (3) The crossed dextral is left-eyed but right-handed, usually by training. The right eye diverges in the test. About 13 per cent are included in this class and about 1.7 per cent in 4. the crossed sinistral, who is right-eyed but left-handed. The left eye usually diverges upon test although the right may diverge.

It was shown in this study that the cyclophoric eye practically always is the non-fixing eye and therefore that the identification of cyclophoria at once gives the clue to the native state of eyedness and handedness.

It was further demonstrated that, while training, accident or disease may reverse the manuality of the individual, eyedness, *i. e.*, the exclusive use of either the right or left visual line for sighting, persists most tenaciously throughout life, requiring severe ocular disease early in life or practical blindness in adults to cause its reversal. This fixity of the unilateral sighting line under the most adverse conditions is additional proof of the dominance of the corresponding cerebral hemisphere and is wholly in keeping with that general asymmetry of structure and function of the limbs, brain and all the paired organs which distinguish man from all other primates, in whom monocular sighting fluctuates laterally as needed. It is interesting to note [6] in this connection that the earliest known human fossil skull shows, by a cast of its brain case, a large lunate sulcus upon the left hemisphere, a reversal of what is normal in right-handedness and proving the original sinistrality of the individual. Riese,[7] records the asymmetry of the surface markings of the brain of several prominent left-handed individuals in favor of the right hemisphere and states that in the case of a gifted left-handed artist, a considerable surface enlargement of the right occipital visual area was regarded as the anatomical expression of the drawing talent of the man. Riese states that "left-handedness and the corresponding domination of the right cerebral hemisphere are based on a definite anatomical organization of the brain." The mere reversal of manuality by training obviously cannot reverse this fundamental background.

The function of each eye in purposeful vision requires restatement and further emphasis. The dominant eye, variously called the fixing or fixating, the orienting, directing, dominant, master or sighting eye, as implied by its various names, has the main function of sighting in its own line of vision. Its fellow eye, with equal significance, has been named the non-fixing, non-sighting, deviating and especially the moving eye, all carrying movement as the chief idea. These original meanings referred to the separate actions of the two eyes in distance vision, but I have shown that these separate actions are even more apparent in the near test mentioned above when the aperture of a retinoscopic mirror is fixated and is carried nearer than the convergence near point. I know of no single, simple eye test which is more revealing than this one.

May I recall the facts of physiological diplopia: It has long been known that objects nearer than the point of fixation and the horopteric surface connected with it have crossed images, while all objects beyond the point fixed have homonymous images. This diplopia exists constantly in man, the images of each eye reaching consciousness entirely separate and distinct but ordinarily without producing diplopia owing to suppression of

or lack of attention to the weaker image of the non-fixing eye. This may be shown by fixing an object five to eight feet away and in the median plane, with both eyes open. If either index finger is pointed at this object along the presumed line of sight the finger will be doubled heteronymously. On closing the eyes in turn the image of the finger is found interposed laterally, not mesially, along the line of sight of one eye, the right eye in the pure dextral and the left in the pure sinistral, regardless of which hand is used in pointing. Now if the gaze be shifted slowly from the point of attention to the finger itself, we note that the "double images in process of combining into a single image do not seek a midway fusion point, but that in the right-eyed the image belonging to the right eye remains stationary on the right visual line, *while that belonging to the left travels the entire intervening distance in order to unite with its fellow image.* In other words one of the heteronymous images is unmistakably a true one." It is apparent from this simple experiment and from other work of Parson, Duane [8] and the author, that the particular function of the dominant eye in exact sighting is to give direction and position by fixating the object in its own line of vision. The task is given to the moving eye of converging to the extent of producing binocular single vision. This truly "moving eye" gives the final judgment of distance, dimension, depth and relief, the qualities of solid or stereoscopic vision, by means of the nervous impulse necessary to produce the needful degree of convergence and by the proprioceptive muscle sense involved in the actual movement. This difference in ocular movement can be seen at times on simple inspection of the test subject where there is moderate exophoria. A small but definite interval often is evident to the subject, in moving from one point of exact fixation to another a few feet away, before the non-sighting eye reinforces the master eye and the momentary indistinctness is overcome by fusion of the foveal images, and by the needful amount of accommodation. The impulse to fuse the two foveal images must be compelling in an apparatus so sensitive that adjustments of one-quarter of a degree between two visual lines can be detected with constancy and where visual acuity drops so sharply and rapidly away from the macula that it is only one-fifth of normal two and one-half degrees from the point of attention.

Sheard (q. v.) in discussing our work and its application to tests for ocular muscle tonicity, imbalance and its correction by prisms, confirms our own written opinion and that of Dolman [9] and of Savage [10] by his statement that "the distorting or dissociating device should always be placed before the non-fixing eye. By such a procedure the directing eye looks at the natural test object and definitely fixes it, while its mate, naturally accustomed to moving into coördination with the directing eye, will readily disclose its latency of error in this function of convergence coördination. If, on the other hand, the dissociating device is placed before the dominant eye and the naturally non-directing eye is allowed to attempt fixation of the test object, a conflict of function immediately is set up and an uncertain, vacillating state of affairs is present."

THE RELATION OF UNILATERAL SIGHTING TO SPORTS

The relation of unilateral sighting to sports is of much interest and of some practical importance. Persons with right manuality often are discovered to be left-eyed by their indifferent or uncertain golf, shooting, tennis, baseball and other branches of sport. It is a foregone conclusion that in these games, played with both eyes open, the crossed dextral and sinistral classes are at an anatomical and physiological disadvantage compared with the pure dextrals and sinistrals, whose sighting line and preferred hand are on the same side and work together naturally. The intimate grouping of the principal motor centers is disarranged in the crossed classes and, in the transfer of part of their activities to the other cerebral hemisphere a certain amount of indecision and awkwardness often is apparent. So long as the crossed dextrals do not strain or press and merely use muscle sense and two-eyed vision they shoot and play games reasonably and at times very well, but when they become particularly anxious, by the very nature of ocular dominance, they must pick up their alignment with the left eye and miss widely to the left. In other words, when exact sighting is necessary, binocular vision is replaced by monocular vision and the sight is brought into line with the object by the master eye along its line of vision. The trained normal shot involuntarily falls into gun alignment by muscle sense after one-eyed alignment is made, the two actions almost blending. Those who shoot from the right shoulder but who are blind in the right eye have only the problem of visual acuity to deal with, as they have monocular vision and none of the distractions of physiological diplopia. The main disadvantage of obligatory monocular vision is that in shooting at a moving object this object must be sought for and realigned continually.

There is no reason why a left-eyed man cannot shoot from the right shoulder with accuracy if the left eye be closed, provided that his arm, hand and back muscle coördinations are equal. His success as a shot under such conditions depends merely upon his visual acuity. However, as the very fact of handedness presupposes inequality or imbalance in the shoulder girdle action, this skeletal imbalance makes for awkwardness and is the sole handicap. Rifle shooting is done, for the most part, with the moving eye closed and merely is a process of unilateral sighting in order to obtain exactness of aim. Here, other things being equal, the chief and almost the only determining factor in the relative ability to shoot from the right or left shoulder is visual acuity. Where rapid rifle fire without exact aim is necessary the visual problem is identical with that of the shotgun, *i. e.*, the rifle is put into alignment with the right eye in the right-eyed and with the left eye in the left-eyed regardless of the shoulder from which the rifleman shoots. Granting then

that a man has the temperament of a good shot, normal binocular vision and normal visual acuity, his success as a shot will depend upon the harmony of action of the corresponding eye and hand, or the lack of it. It is elementary optics that with both eyes functioning equally there is no such thing as accurate sighting.

Two other main points of interest have arisen out of this work. The first is that the determination of native handedness should be considered as an essential test in all orthopedic examination and especially in its application to the correction of postural defects. It is difficult to see how correct native skeletal and muscular balance can otherwise be restored in the 15 per cent of all patients who form the crossed dextral and sinistral groups.

Finally, my attention repeatedly has been drawn to the nervous instability of the children who make up these crossed groups. It may have been coincidental or of great significance that all of the choreic and choreiform children whom I have seen in the past nine years of this investigation have been crossed dextrals or have been frankly left-handed children in whom an attempt has been made to force them into full dextrality or a certain amount of it. The attempt never has been made, but it is here suggested that the deliberate re-education of this type of patient to frank left-handedness and full left-sided dominance, probably regardless of age, is a possible means of re-establishing nervous control.

The whole background of the matter of handedness is contained in Parson's statement, "It will be better understood if we conceive of the sighting line as belonging not to the eye and the hand but to the whole body." Considering then that the master eye is "the organism's sighting line," deviations from the inherited relation of eye and hand should be prevented in early childhood by the earliest possible recognition of what should be normal for the individual and by the maintenance of this normalcy.

SUMMARY AND CONCLUSIONS

1. The idea that a given object is sighted by both eyes along a line midway between the eyes, the effort requiring equal amounts of convergence and accommodation, optically is untenable.

2. One eye always dominates the other. The right eye is the master in the fundamentally right-sided, about 78 per cent, and the left eye in the fundamentally left-sided, about 22 per cent. This true ratio of right- and left-eyedness and handedness, 1 to 4, is concealed by training to right-handedness.

3. The line of sight is on the side of the dominant eye and, therefore, is right or left lateral. Manuality may be reversed by training, but the line of sight is fixed throughout life unless reversed by severe ocular disease early in life or by practical blindness of the master eye in adult life.

4. The two eyes have different functions in exact sighting, the dominant eye fixing the point of attention in its own line of vision, while the moving eye, by its actual movement of convergence to produce binocular single vision, giving the final judgment of distance, dimension, depth and relief.

5. Right-handed persons often are discovered to be left-eyed by their indifferent or uncertain golf, shooting, etc. In all sports the crossed dextrals and sinistrals are at an anatomical and physiological disadvantage, as their sighting line and preferred hand are on opposite sides, disarranging the natural relation of the principal motor centers.

6. The determination of native sidedness (handedness and eyedness) should be a basic test in all orthopedic procedure concerned with the correction of postural defects.

7. Nervous and mental instability apparently is more common among the crossed dextrals and sinistrals than among the pure dextrals and sinistrals. The suggestion is made that the deliberate re-education of these classes to their natural full left-sided dominance may be an important factor in re-establishing nervous balance.

8. Native dominance of either side of the body should be recognized as early as possible and deviation from the inherited relation of eye and hand prevented.

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DISCUSSION

Roderic O'Conner, M. D. (909 Hyde Street, San Francisco)—Doctor Mills very considerately sent me his paper to read knowing probably that it could not be properly discussed offhand simply from hearing it. This gives me the opportunity to take up each heading as he covered it.

1. Convergence. The non-fixing does not always fail first in this test. Vertical deviations, apparent or hidden, have much to do with convergence, and I have seen many apparent cases of insufficiency of convergence disappear on correcting the vertical deviation by prism or, if of high degree, by operation.

2. As regards the non-fixing eye being the one to give us ideas of distance, perspective, etc. In 1910, while a Major in our regular Medical Corps, I published a paper on "The Relations of the Eyes to Rifle Shooting" in which I mentioned the question of the dominating eye as follows: "The judgment of absolute distance by the aid of convergence is very uncertain, but the ability to tell whether one object is farther than another by the amount of convergence necessary to maintain binocular vision is very acute. This is so because in binocular vision the lines of vision intersect at the object seen. Therefore the slightest difference

in distance must be appreciated in order to maintain binocular vision. This brings up the question, does one eye do all the converging or do both eyes converge equally? And this in turn brings us to a consideration of the dominating, fixing, or sighting eye. About the same proportion of people are right-eyed as are right-handed, and this may account for the occasional man who is unable to shoot from the right shoulder because the left is his sighting eye; and this in spite of normal vision in the right eye. One can easily determine which is the sighting eye by aligning, with both eyes open, the point of a pencil on a mark. While doing so close each eye in turn and the one that maintains the alignment is the sighting eye. In the vast majority of people it is the right eye. Now if, while holding the point on the mark the focus is changed to the point which produces convergence to that extent, the mark still being seen hazily, and then the non-sighting eye is closed, it will be found that the alignment is still maintained. This would appear to prove that the non-sighting eye did all the converging while the sighting eye kept the same line of fixation. The advantage of this is evident—the entire muscular effort is appreciated by one group of muscles instead of being divided between two groups, which would mean a finer judgment." This experiment is practically the same as that given by Doctor Mills to prove the same point.

3. As regards the eye before which to place the Maddox rod. I always make two tests, one with each eye fixing in order to find any tendency to non-comitancy (paresis). In the absence of such it is rare to find an appreciable difference in the results. But then, as shown by Marlow and myself in our work with prolonged monocular occlusion, tests as ordinarily made are worthless in the diagnosis of muscular conditions in kind, degree, or even presence. My findings in 110 orthophoric cases, with symptoms, as given at last year's meeting of the Academy of Ophthalmology and Otolaryngology, proves this conclusively.

4. Eyedness in sports. Aside from rifle shooting I have thought of this in connection with golf. About two years ago I called attention to this matter in a short communication in *The Fairway*. It was in answer to a statement by a leading professional to the effect that the left eye was the one to "keep on the ball" as the backswing would carry the head so far around that the nose would interfere with the sight of the ball by the right eye. My contention was that the head must not turn so far as to prevent a sight of the ball by both eyes and that both must be "kept on the ball" in order to permit accurate judgment of distance, etc.

5. As regards orthopedic considerations. I have had no experience in this connection. I have, however, in ordinary imbalances and have relieved many cases of head tilting with accompanying lowering of corresponding shoulder, also blinkers and facial contorters by prismatic or other correction of evident muscle deviations as well as those diagnosed by aid of prolonged monocular occlusion.

6. As to his conclusions. I agree absolutely with his first five, and admit lack of qualification to even express an opinion as to the last three. The question of the fixing eye comes up in my daily work in the following connections:

1. In using prolonged monocular occlusion in the hunt for a hidden deviation, and in making a complete diagnosis of an evident one, the non-fixing eye is the one occluded.

2. In the treatment of the lower degree of deviations by prisms. In most cases I divide the prism strength equally between the two eyes and give a full correction of any vertical. Only in definitely paretic cases do I give a greater or total allowance to one eye, the reason being that prisms change strength with angle of gaze through them. If of equal strength the increase in one keeps pace with the decrease in the other, so that the total remains the same, thus suiting comitant cases in all directions of gaze. In this connection, therefore, I do not agree with Sheard, who suggests placing the entire prism strength before one eye—the non-sighting.

3. In relation to operative work on ocular muscles. Subject, of course, to the general principle of finding the weak muscle and of improving its power to act I try to bring eyes to parallel by working on the non-fixing eye. This cannot be done always. Cases of paretic superior rectus frequently fix with that eye adjust the position of the head to relieve the weak muscle (tilt, chin up, chin in) and either bring the other eye to parallel or permit it to go far out of position. This occurs in some cases of upshoot of one eye (spasm of its inferior oblique) associated with paresis of the superior rectus of the other eye. At the San Francisco A. M. A. meeting I demonstrated such a case in which an upshoot with inward squint of right eye was corrected by shortening the superior rectus of the left, proving the importance of finding the muscle at fault in order to avoid treating cases by rule of thumb measures, which is done too often in strabismus work. Much harm would have resulted in this case from tenotomy of the internal rectus.

The day this discussion was written two left-eyed patients were seen. One was practically emmetropic and said she was right-handed, but admitted doing some things with the left hand. The other was definitely right-handed, but had a three-diopter myopic astigmatism in the right eye not corrected till the fourteenth year. The first may have been educated out of a left-handed tendency, while the second probably was educated into left-eyedness by reason of poor vision in the right.

In conclusion I wish to compliment Doctor Mills on the results of his work, for I am in a position to understand how much time it must have taken to gather the records from which he drew his conclusions. Also to thank him for the compliment of asking me to open the discussion of a subject that is of far greater importance than would appear on superficial consideration.

Frederick C. Cordes, M. D. (384 Post Street, San Francisco)—The work of Parsons and that of Mills on eyedness and handedness has revised our idea of the mechanism of binocular vision. Reik contended this was merely a repetition of Gould's theory, which was that dominance is an adjustment due to imperfect function. Parsons' theory—and this is sustained by Mills—is that lateral sighting is a basic physical necessity due to peculiarities of our body structure and that it is an inherited tendency.

In the present paper on unilateral sighting, Mills brings out some factors that remove the subject from the theoretical field into the practical one.

The relation of unilateral sighting to sports is an interesting one and explains certain difficulties encountered in patients who complain of their inability to play golf or shoot, particularly when under stress.

Doctor Mills' observations in choreic and choreiform children is, it seems to me, an important one. The determination of the fixing eye is so simple that it might be valuable to check this on all cases of this type in the various children's clinics. Should the above observations be borne out it would be important that parents be instructed not to attempt re-education in left-handed children so as not to add one additional factor in the possible production of nervous instability.

The placing of prisms before the non-fixing eye in vertical muscle imbalance (or if the amount must be divided, placing the larger amount over the non-fixing eye) should also be kept in mind.

I feel the future of this work offers many possible practical applications.

P. Obarrio, M. D. (350 Post Street, San Francisco)—I wish to thank Doctor Mills for giving me the opportunity of discussing his very interesting paper at leisure with the original at hand. I regret very much, nevertheless, that the limitation of five hundred words placed on any discussion is a handicap very hard to overcome, as the very nature of the subject, plus the

description of experimental data, naturally covers considerably more space.

I have, therefore, discussed the subject in detail, using about twelve pages of typewritten material, which I have placed in the hands of Doctor Mills.

The proper experimental lay-out is given in detail as well as the manner of conducting experiments that conclusively show that the matter of "handedness," as described by Doctor Mills, does not affect the basic principles concerning the production of experimental diplopia.

That in the median line the duplication of images is absolutely symmetrical.

That the slight lateral deviation of the near object will, of course, produce a slight displacement explaining the so-called right or left "handedness."

That the contention of the author to the effect that "one of the heteronymous images is unmistakably a true one" is demonstrated to be optically impossible, for in order that an image be a true one, rays of light must be exactly focused at the fovea. It is evident then that neither one of the heteronymous images is a true image not even at the time when the white target is in alignment with the black target and the eye, for at this moment the image is reproduced in the region of the macula but by circles of diffusion, and in order to procure a true image you must accommodate also, which entails in this case a converging action with immediate disappearance of the double images.

I must also differ from the author as regards his first conclusion, to the effect that "the idea that a given object is sighted by both eyes along a line midway between the eyes, the effort requiring equal amounts of convergence and accommodation, optically is untenable," for I have on the contrary demonstrated that this action is not only tenable but optically and physiologically correct.

Now as to the relation of sight in sports I claim that, generally speaking, the question of sight is of relatively secondary importance throughout the whole realm of sports and that the matter of muscle coordination, quick perception, adaptability, responsiveness, reaction to surroundings, temperamental nature and what not, plus other items, with or without regard to "handedness," constitute a proficient player, and among these the champions are the few gifted and inspired.

The creator of a symphonic poem, an immortal poet, or a clever acrobat, all seem to perform without apparent effort.

An analysis of their mode of procedure is a difficult task at best.

After writing the above I have the authority of no less a person than Bobby Jones, writing in the Oakland *Tribune* of September 30, 1927, in which he states that: "I have been asked several times what part of the ball I looked at when playing golf. In answer I have always said that I did not look at it at all, but was merely conscious of its presence. And I have tried, too, as an experiment to gaze fixedly at the ball throughout the swing, and every time, without exception, I have dug up huge masses of turf behind the ball.

"When I top a shot it is because my swing is out of its customary rhythm, usually because I am fearful of some other mishap. A quick, spasmodic back swing is ordinarily the beginning, followed by a snap at the ball which carries my shoulders up and the club out of its normal path. And there is no better cure for topping than a slow back swing. The comfortable, well-timed stroke, very rarely catches the ball above center."

This then is the gist of vision as applied to golf. I can mention several instances of a similar nature regarding trap shooting and other sports.

My records show cases of total loss of one eye; of very marked astigmatic errors with notable diminished vision in one or both eyes, etc.; cases where stereoscopic vision is out of the question. These cases being considerably better than average at different sports, notably golf.

❊

Doctor Mills (closing)—In answer to Doctor O'Connor: The non-fixing eye always yields first in my fixation tests inside the near point except in cases of esophoria where it may be necessary to use the Maddox rod, rotary prisms, or the clinoscope to determine the cyclophoric eye. It is a matter of importance that in myopia the fixing eye usually is more myopic, and myopia appears earlier than the non-fixing. The reverse appears true in hyperopia, and these apparent discrepancies, associated with the differences in ocular dominance and manuality, have confused many who have been interested in the subject of changes of refraction. These conditions really form the background upon which refraction changes are based.

I had the pleasure, in my first paper on this subject, of bringing Doctor O'Connor's paper into the literature of eyedness and handedness. In common with Savage and several others, here and abroad, he came close enough to the explanation of ocular dominance to have made his non-recognition of it a matter of regret.

Of course Doctor O'Connor now probably would correct his statement that "About the same proportion of people are right-eyed as are right-handed." The facts are that about ninety-two in one hundred are right-handed and about seventy-eight in one hundred right-eyed, a difference of about 15 per cent, which form the troublesome crossed classes.

With regard to placing a prism preferentially before the cyclophoric eye: In nearly every eye the superior obliques are weaker than the inferior obliques. Prisms base down before the hyperphoric eye call the superior oblique into action, thus helping the superior oblique of that eye to parallel the vertical axis with that of the median plane of the head. If a prism is placed base up before the fixing eye, however, its inferior oblique is called into action, thus throwing additional work on its naturally too weak superior oblique and exciting discomfort. Savage states that weakness of the superior oblique is two hundred times more common than weakness of the inferior oblique. For this reason I feel that a corrective prism should be placed entirely before the non-fixing eye where the vertical deviation is two degrees or less and that a larger amount should be placed before this eye where it is necessary to split the prism in higher degrees of error.

Many thanks are due Doctor O'Connor for bringing out the practical value of the tests for ocular dominance.

Doctor Obarrio's comments on the subject of physiological diplopia are drawn from an interesting report of experiments done by him which he was kind enough to send to me. This report is somewhat longer than my own original paper, and as it presents data which have never been confirmed and which are wholly at variance with the work of practically all recent authorities, it would appear unwise either to draw conclusions or to make critical comment until such confirmatory evidence is at hand.

Doctor Obarrio's conclusions go back to the anciently held idea of the cyclopean eye which pays no attention to the great law of corresponding points which is back of all binocular phenomena.

His paper has been sent to Doctor Parsons for appropriate testing and report.

The proof of the findings of my near test for "eyedness" is that it works in daily practice and correlates the evidence given by the different forms of hyperphoria, cyclophoria, muscle imbalance, larger refractive errors and disease into a complete and easily understood picture.

With regard to the function of the eyes in sports, it is evident that superexcellence in any sport demands what I have called in shooting "the temperament of a good shot." Without this no local harmonies of function will ever lift the individual above mediocrity in play or work.

The numerous cases of persons having monocular

vision who have excelled in sports clearly show the adaptability of the brain and eye to new conditions.

With monocular vision, distances and localizations are gauged by the physiological double images registering on the retina outside of the macula, by the relative sizes of objects, by the parallactic displacement of objects in the foreground on those more remote, and by the effects of contrast, *i. e.,* light, shade, and distinctness. Experience is the final factor which fixes these varying values according to individual ability.

HUNTINGTON'S CHOREA—SOME PATHOLOGICAL STUDIES*

WITH CASE REPORTS

By WALTER F. SCHALLER, M. D.

DISCUSSION *by Thomas G. Inman, M. D., San Francisco; Samuel D. Ingham, M. D., Los Angeles; Glanville Y. Rusk, M. D., San Francisco.*

IN neurological research it is now the fashion to investigate the motor system. Studies have taken a trend along the different lines of the old motor system, the corpus striatum and related structures in the subthalamic region and the brain stem; and of the sympathetic system.

INTRODUCTION

This paper aims to discuss briefly some of the current ideas on the mechanisms of corpus striatum disorders, and to report pathological findings in three cases of Huntington's chorea.

Ramsay Hunt in May, 1916, presented a paper before the American Neurological Association on the "Syndrome of the Globus Pallidus" in which he defined the pathology in a case of juvenile paralysis agitans as due to atrophy of the large motor cells of the globus pallidus. In four cases of Huntington's chorea which he also studied he found these large cells well preserved, but also found a wholesale destruction of the smaller cells of the neostriatum (putamen and caudate). Oskar and Cecile Vogt, from a large experience in pathological brain research, have formulated the hypothesis that lesions of the neostriatum are accompanied by tremor, chorea and athetosis, and lesions of the globus pallidus are accompanied by rigidity. The neostriatum is a terminal organ, and there is no direct connection between it and the cerebral cortex and no spinal projection system. Fibers from the neostriatum go to the globus pallidus and are inhibitory or steadying in function. A destroying lesion of the neostriatum, therefore, is a release phenomenon, permitting a globus pallidus hyperkinesis, as of tremor in paralysis agitans. In severe lesions of the globus pallidus there occurs a rigidity from dominance of the tonus centers of the hypothalamus and brain stem to which the globus pallidus sends a projection system, principally by the ansa lentincularis and the lenticular bundle of Forel. These fibers are largely medullated at birth; on the other hand the striopallidal fibers are not medullated even in an infant of five months. It is therefore possible, according to the Vogts, to draw an analogy between the uncontrolled movements of infants and those suffering from chorea. The obvious explanation in both cases is a lack of neostriatal control.

The Vogts have further elaborated their theory by the effect of the different pathological processes at work in the neostriatum. The state of disintegration (état de désintégration) being a milder process, causes tremor; whereas a fibrous state (état fibreux) or gross lesion, being a more severe process, produces choreic movements. The fibrous state is an elective necrosis of the ganglion cells and of the finest nerve fibers, with the crowding together of the large medullated fibers, causing a striking picture.

From a large clinical experience S. A. K. Wilson has made some penetrating observations in this subject. In the disease described by him, progressive lenticular degeneration, tremor and rigidity are both early symptoms, the globus pallidus being intact. Tremor and choreo-athetosis are very different in type, and it is inconceivable that they should be caused by the same lesions. Numerous instances have been reported in which tremor and choreo-athetosis have occurred with an intact corpus striatum. Choreo-athetosis, according to Wilson, is due to a lesion on the afferent cerebello-mesencephalo-thalamo-cortical paths. Wilson criticizes attempts to localize with precision the different clinical syndromes, and feels that these localizations are not justified by the present state of our knowledge of anatomy and physiology.

Of the distinguished workers in this field the names of Charles Foix of Paris and of A. Jacob of Hamburg should not be omitted. The latter investigator believes that athetoid movements in the adult are found only in globus pallidus lesions. Lesions in the corpus luysi produce tortion spasm (corpus luysi plus putamen. Thomallas case reported by Vogt). Lesions of the substantia nigra determine Parkinsonian rigidity.

HUNTINGTON'S CHOREA (CHRONIC CHOREA)

George Huntington of Pomeroy, Ohio, in the *Medical and Surgical Reporter* for April, 1872, described the disease which bears his name. His classical and lucid description has not been since improved upon. Huntington stressed the cardinal symptoms of a progressive chronic chorea in adult life, with a hereditary predisposition and tendency to insanity and suicide. Properly speaking, Huntington's chorea should be applied strictly to those cases of hereditary origin with psychic effect, but the term is now frequently applied to chronic adult chorea in contradistinction to the acute childhood form, or Sydenham's chorea. Arthur S. Hamilton in the *American Journal of Insanity* for January, 1908, analyzed twenty-seven cases of chronic progressive chorea. He states: "I can see no means of diagnosing accurately between chronic progressive chorea with hereditary predisposition and chronic progressive chorea without hereditary predisposition. To me they seem the same disease."

Glanville Y. Rusk, in the same journal for July, 1902, has written an important article on the

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* From the Neuropathological Laboratory of Leland Stanford, Jr. University Medical School.

* Read before the Neuropsychiatry Section, California Medical Association, at the Fifty-Sixth Annual Session, April 27, 1927.

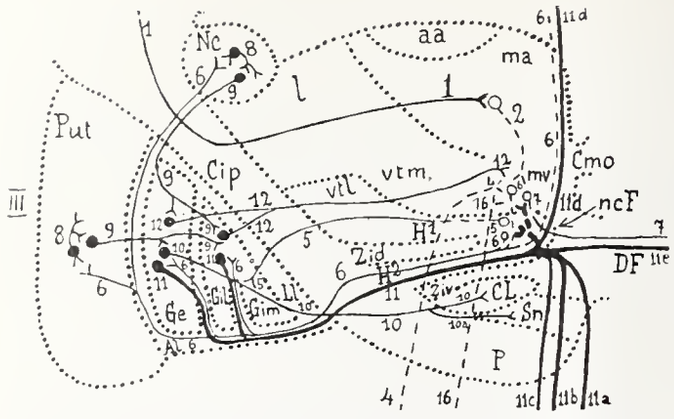

Fig. 1—Principal connections of the corpus striatum (C. and O. Vogt). Afferent pathways: (5, 6) thalamostriatal fibers. Efferent pathways: (9) striopallidal fibers; (10) lenticular bundle of Forel; (11) Ansa lenticularis.

pathology of the disease. Two other Californians besides Rusk—Andrew Hoisholt and Leo Newmark—have contributed noteworthy articles: the latter reported an isolated lesion in the putamen, although the clinical picture was that of tremor rather than of chorea.

From the pathological side, the small ganglion cell atrophies in the neostriatum have been mentioned. The essential pathological process has been described as one of degeneration with glial and connective tissue replacement of nerve elements, and the characteristic histological change as a fibrous state of the neostriatum. Winkler emphasizes the extreme atrophy of the whole corpus striatum, which in some cases may not be identified macroscopically. The neostriatum appears to be more affected than the globus pallidus. The subthalamic region is also atrophied, which may be explained by the close anatomical relationship with the corpus striatum. Numerous observers have noted atrophy of the cerebral cortex. The third and fourth cortical layers are the most affected. There is a poverty of the tangential fibers. This brief clinicopathological survey will serve as a guide to interpretations of personal material.

CASE REPORTS

Case I—Stanford Necropsy Record XVII, 172. H. M., male, age 50, teamster, inmate of Relief Home, lived about a year after the onset of the chorea, and died of a complicating pneumonia. There was no history of a hereditary predisposition in this patient, and no history of mental disorder. The mentality was fair, but showed some defect in constructive idea association. Neurological and serological examinations were negative excepting for the constant chorea, affecting station, gait, extremities, and speech. More peripheral arteriosclerosis was present than was to be expected for his age. The lungs gave evidences of a chronic bronchitis.

After the brain was hardened in formaldehyde solution, horizontal cuts of the right hemisphere were made through the basal ganglions. The first cut was made on a level with the greatest width of the optic thalamus and the floor of the anterior horn of the lateral ventricle (Fig. 2). The nucleus lenticularis was particularly atrophied and poorly defined in this section. Another horizontal section was made parallel to the first, and 4/10 of a centimeter below it. This section through the anterior commissure and the anterior quadrigeminal body also shows a marked reduction in the size of the lenticular nucleus. Both of these sections show a marked frontal cortical atrophy. The head of the caudate and the subcortical white substance were not markedly atrophied. Nissl stains of the cortex showed cellular atrophies of the frontal and sensory-motor cortex, manifested by small convolutions and wide sulci, but not of the occipital or temporal lobes. Measurements showed a maximum cortical depth averaging 3 millimeters. The precentral convolution showed a marked decrease in the width of the pyramidal (third) layer, and decrease in the number of cells, and a practical absence of the internal granular layer; in contrast, the Betz cells were not decreased in number. The whole pathological process was one of a slow degeneration, there being no evidence of phagocytosis or increase in cellular glia.

Case II—Stanford Necropsy Record XVII, B. B., female. Unfortunately my record of this patient, an inmate of the Napa State Hospital, was lost in the years intervening since her death. The details have escaped my memory and the institutional case history cannot be found. Dr. G. W. Ogden, medical superintendent of the Napa State Hospital, sent me the following information obtained from the record book:

"Upon admission she was thirty-eight years of age, widow, laundry worker; diagnosed as a case of dementia praecox at that time. The cause of death was given as acute bronchitis; and contributory, exhaustion from Huntington's chorea. Inasmuch as I have only that much data, I cannot give you more information as to whether she was a true Huntington's chorea with mental symptoms, or whether she was erroneously diagnosed as a dementia praecox, and subsequently developed a chorea."

The brain was hardened in formaldehyde solution and the right hemisphere was cut in serial horizontal microscopic sections and stained by the methods of Loyez, and of Weigert. The left hemisphere was reserved for special cortical studies and for studies of meninges and blood vessels. The most apparent gross defect was cortical atrophy, loss of subcortical medullary substance and dilatation of the ventricles (Fig. 3). A section through the corpus striatum on a plane with the anterior commissure and the anterior quadrageminate body shows a relatively normal size of the caudate and putamen, but a reduction in the size of the globus pallidus (Fig. 4). However, the projection systems of the globus pallidus, *viz.*, the ansa lenticularis and the lenticular bundle of Forel, were well marked. Gross changes in the corpus striatum in this case are not, therefore, without question. Measurements of the cellular cortex after hardening, and under control of a normal cortex, showed: maximum precentral 2½ to 3 millimeters, as compared with a normal of 5 millimeters, and a frontal depth of 3 millimeters as compared with a normal 4½ millimeters. The parietal cortex was atrophied to a less extent; the occipital cortex was not atrophied.

The degenerative process was essentially a chronic one, with deficiency of the third cortical layer or layer

Fig. 2—Case I. Macroscopic horizontal section through the right hemisphere on a level with the greatest width of the optic thalamus. Atrophy of lenticularis and frontal cortex.

Fig. 3—Case II. Microscopic horizontal section of right hemisphere through thalamus at level of anterior nucleus. Loyez stain. Cortical atrophy. Enlarged ventricular horns. Loss of subcortical medullary substance. Lacunae in corona radiata.

Fig. 4—Case II. Microscopic horizontal section through right hemisphere. Level of anterior commissure. Weigert stain. Atrophy of globus pallidus.

of pyramidal cells, and a scattered round cell glial proliferation. In the prefrontal cortex the inner granular layer was deficient. The Betz cells were not relatively lessened and were normal appearing. In the regions of greatest cortical atrophy the cortical fiber systems were likewise atrophied, especially noted in the supraradial network and in the tangential layers of Exner and Baillarger. The cortical meninges showed some thickening in the frontal region and some plasma cells, but no signs of acute inflammation. The blood vessels of the cortex and of the base showed no sclerosis.

The corona radiata showed lacunae plainly visible to the naked eye and now determined to be secondary postmortem changes. Rusk (*vide supra*) discusses these changes fully in his article, and believes them to be due to a gas-producing bacterium; frequently the *B. aerogenes capsulatus*.

Case III—Stanford Necropsy Record XX, 106. H. H., male, age 41, peddler, was under my observation for four years, during which time he was an inmate of the San Francisco Relief Home. The clinical picture was that of a typical chorea, duration between six and seven years. It affected the trunk, extremities, muscles of speech and of expression. He was well behaved, tractable, and there was no suspicion of a psychosis. A slight degree of mental deterioration was evidenced, principally in constructive idea association. No history of hereditary predisposition was obtained.

The physical and serological examination revealed nothing exceptional except for the severe chorea. He died of a bronchopneumonia. Motion pictures were taken of this patient.

The brain was chromated. Horizontal sections of the entire cerebrum were made from above downward, and stained by Kulschitzki's myelin stain. Gross atrophy of the cortex was but slight and only demonstrated microscopically by a diminution of the radial and tangential fibers The most noteworthy changes were found in the dilated ventricles and in the marked atrophy of the corpus striatum. The large, normal-appearing optic thalamus stood out in marked contrast to the atrophic corpus striatum. The retraction of the corpus striatum resulted in a dilatation of the anterior horn of the lateral ventricle, in contrast to Case II, where dilatation was due principally to cortical atrophy.

A section at the level of the anterior nucleus of the optic thalamus (Fig. 5) showed a flattened caudate. The globus pallidus was greatly atrophied and only identified in the lowest levels of the striatum (Fig. 6). At these levels the caudate and putamen, although much atrophied, were well marked. There was a fibrous state of the putamen.

SUMMARY AND CONCLUSIONS

Anatomical studies in these three cases of chronic chorea revealed atrophy in the corpus

Fig. 5—Case III. Microscopic horizontal section of left hemisphere at somewhat lower level than Fig. 3. Kulschitzki stain. Flattened caudate. Narrow putamen. Enlarged ventricular horn.

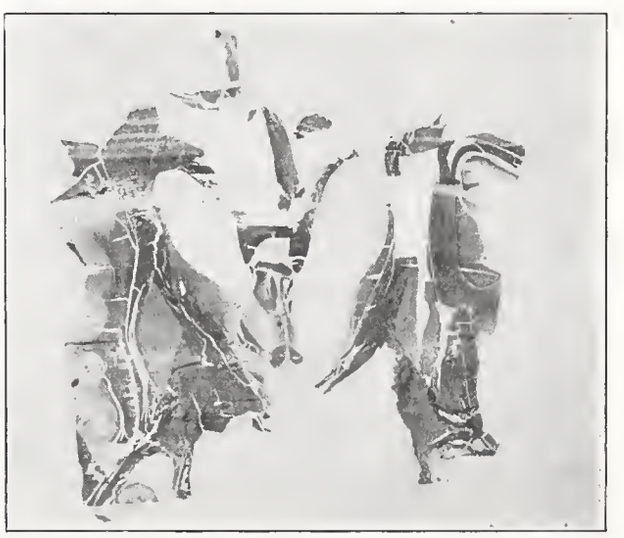

Fig. 6—Case III. Microscopic sections at the level of the anterior commissure. Kulschitzki stain. Marked atrophy of the corpus striatum.

striatum and the cerebral cortex, without evidence of any inflammatory process.

The globus pallidus was equally involved in the degeneration with the neostriatum.

The case affected with a psychosis (II) revealed well-marked cortical changes and loss of subcortical medullary substance with but little atrophy of the corpus striatum. A case (I) of short duration, and with but slight mental defect, showed moderate atrophy in both cortex and corpus striatum of about equal degree. An advanced case (III) with but slight mental defect showed marked atrophy of the corpus striatum and slight cortical changes. These variations in the relative involvement of the cortex and of the corpus striatum would speak for the anatomical and functional independence of these structures and would throw doubt on the classification of chronic chorea as a systemic disease.

909 Hyde Street.

DISCUSSION

Thomas G. Inman, M. D. (870 Market Street, San Francisco)—From his study of the three cases reported by him, Doctor Schaller seems to show conclusively that the variations in the clinical pictures manifested by patients suffering from Huntington's chorea depend upon variations in the location and amplitude of the degenerative process responsible for the disease. His opinion casting doubt upon the systemic nature of the condition is supported by his observations and by those of other investigators, all being in agreement that no developmental relationship exists between the different parts of the brain affected. Nor can the distribution of the lesions be explained by structural contiguity.

It is difficult to understand how a disease of the nature of Huntington's chorea presenting such a remarkably diversified group of symptoms arising from pathological changes in unrelated structures should occur sporadically. This seems especially true, since the large series of Muncie—962 cases—could be traced to six or seven ancestors who originally settled in Long Island and Connecticut. Had further extension of the investigation been possible it might have been shown that one defective ancestor was responsible for the whole series. It is quite probable that some of the cases reported as occurring sporadically are not true Huntington's chorea.

Physicians interested in the subject are indebted to Doctor Schaller for his concise review of recent literature dealing with the striatal system as well as for the painstaking labor expended on his own cases.

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Samuel D. Ingham, M. D. (1920 Wilshire Boulevard, Los Angeles)—Investigations of the so-called extrapyramidal portions of the central nervous system have been among the most important developments in neurology in the past decade. Doctor Schaller has given us a very good sketch of this work, in addition to his contribution of the clinical and pathological findings in the three cases reported.

Evidence already accumulated from the studies of the pathology of epidemic encephalitis indicate the importance of substantia nigra, lesions of which cause the so-called paralysis agitans picture, especially the rigidity and characteristic attitudes. From available evidence it would seem that various tremors and choreiform movements are traceable to lesions of corpus striatum, but this is not conclusive so far as the explanation of chorea is concerned. Acute chorea of childhood (Sydenham's chorea) offers another problem in the same line, and, so far, pathological studies of this condition have been almost entirely unproductive. It is especially to be noted that the area of the corpora striata were apparently free from damage in cases studied by Winkleman and others.

Doctor Schaller is very conservative in his conclusions, but makes an interesting observation in suggesting that the association of chorea and psychoses may be explained pathologically by more or less independent processes involving the corpus striatum and the cerebral cortex. While his findings do not completely establish the relations between pathology and symptomatology, or answer finally any one of a number of important questions that have arisen, the same may be said of the work of any single individual. Nevertheless this work forms a link in the chain of accumulating evidence, which may eventually establish this subject on a firm basis.

❦

Glanville Y. Rusk, M. D. (University of California Hospital, San Francisco)—With much interest and profit I have read Doctor Schaller's review of the suggestive work of others and his own critically interpreted observations. It suggests itself to me, however, that the inclusion of this group of cases of chronic senile chorea under the caption of Huntington's chorea is open to discussion. The remarkably hereditary features of Huntington's chorea are not borne out by the clinical history, either as to antecedents or in the descendants of any of the patients. The profound dementia is also lacking. Even though similar areas may be found affected in both groups of cases yet the hereditary features of the true Huntington's chorea emphasize an inborn defect, and I am inclined to look to other etiological factors as responsible for the senile chorea.

ADVANCED CANCER—EXPERIENCES IN ITS TREATMENT WITH COLLOIDAL LEAD*

By Albert Soiland, M. D.
William E. Costolow, M. D.
and
Orville N. Meland, M. D.
Los Angeles

Discussion *by Franklin R. Nuzum, M. D., Santa Barbara; Henry J. Ullmann, M. D., Santa Barbara; Frederick F. Gundrum, M. D., Sacramento.*

In an endeavor to improve our results in the treatment of advanced malignant conditions by radiation, we have attempted to supplement our routine treatment with the heavy metals in colloid form. Recently there has appeared a great deal of comment in the literature on the use of gold, copper and lead in these diseases. We have experimented with all of them, but have given special attention to lead, since the reports issued by Blair Bell, coming as they did from the University of Liverpool, where they were carefully checked, seemed to offer more than anything suggested up to the present time. Because of the newness of the treatment, as well as the extreme toxicity of lead, we have been somewhat hesitant in suggesting its use in any except advanced cases which were hopeless as far as any other therapy was concerned. Many of the patients had been treated surgically; some had undergone one or more series of heavy radiation, either by high voltage x-ray or radium, while a few had had no previous treatment of any kind.

Prior to the introduction of lead in cancer therapy, many clinicians have written about the extreme toxicity of this metal when accidentally introduced into the system. It was for this reason

*Read before the General Medicine Section, California Medical Association at the Fifty-Sixth Annual Session, April 25-28, 1927.

that Bell advocated a colloidal preparation in order to reduce the poisonous effects as much as possible. Despite these precautions disagreeable reactions are the rule.

For purposes of discussion only, two typical cases will be described in detail, after which the clinical phases will be taken up separately.

CASE REPORTS

I. M.—Female. Age 50. Weight 150 pounds.

Diagnosis—Postoperative adenocarcinoma of left breast with metastases in both axillae, supraclavicular regions and the right breast. Edema of left arm.

Previous Treatment—1. Radical removal of left breast one year before, followed by rapid recurrence in the operative field.

2. Two courses of high voltage x-radiation, after recurrence was established, with temporary improvement.

Lead Treatment—Two massive doses, totaling 180 milligrams, given at an interval of ten days.

Constitutionally, there was severe nausea and vomiting for three days, accompanied by a prostrating backache. A progressive secondary anemia took place when the hemoglobin dropped from 72 per cent to 19 per cent, with a corresponding drop in red cells from 4,800,000 to 1,112,000, making a transfusion necessary. Two weeks later the blood was regenerating, as the hemoglobin was 51 per cent and the red cells had reached 2,928,000. The kidneys suffered very greatly. The urine was diminished in amount. It was loaded with albumin, casts and red cells. Though the anemia improved steadily, the nephritis became progressively worse.

Locally, the growth diminished in size; it became slightly nodular and more easily movable. Some of the skin nodules became discrete, softer and almost disappeared.

Outcome—Because of the severe nephritis incident to the treatment, it was impossible to repeat the injection. The temporary local improvement was followed by a rapid progressive increase in all the areas involved. The patient died about four months after cessation of treatment.

II. H.—Female. Age 68. Weight 150 pounds.

Diagnosis—Carcinoma of cervix with extension into both broad ligaments and down onto the posterior vaginal wall, producing almost a rectal occlusion.

Previous Treatment—Radium applied elsewhere four months previously with no improvement. Complained continuously of rectal pain and constipation.

Lead Treatment—Two doses of colloidal lead totaling 139 milligrams were given, two weeks apart.

Constitutionally, there was no particular effect after the first injection; however, after the second injection, there was an excruciating backache. The urine was passed frequently in small amounts and contained albumin, casts and red cells. There was no particular effect on the blood. The patient became irrational and remained so for three or four days.

Locally, following the first injection there was no discomfort, though at the end of ten days there had been a diminution of pain and a shrinkage of the tumor to one-half of its original size. For the first time in three months she was having normal stools. After the second injection there was an agonizing rectal pain with a continual tenesmus. In order to see if x-radiation would improve the condition where applied to a tissue containing lead enough to produce a marked secondary radiation, she was given three high voltage treatments to the pelvic region. In about a week the mass in the posterior vaginal wall disappeared and she developed a recto-vaginal fistula. The induration in the pelvis decreased and the pain decreased as long as the stool was of the proper consistency, though morphin had to be administered frequently. The patient became very despondent and she finally had a cystisis superimposed on her other conditions. Her general condition was good, but no further treatment was advised because of fear of increasing the size of the fistula. She was sent home with a poor prognosis. Her family physician writes that she is now up and around—goes out for a ride occasionally and has little discomfort except that incident to the fistula. Whether the fistula came on as a result of the radium previously applied or whether it was due to a combination of her high voltage x-radiation and lead on the malignant tissues in the rectal wall, we are at a loss to say, but we feel that the lead itself had considerable to do with it, since after the first injection, there was such a rapid diminution in size of the growth. Needless to say there has been an arrest in the progress of the disease; how permanent, time alone will tell.

PREPARATION USED AND EFFECTS PRODUCED

The first preparation that we have used was pure lead in colloidal form, made by Bischoff of the Santa Barbara Cottage Hospital, according to directions given by Bell and his co-workers. When freshly prepared, it is jet black in color, though after a few days it gradually changes to a gray, and finally to a milky white. These changes have been ascribed to oxidation with the formation of the oxids and hydroxids of lead, to both of which the toxic symptoms are attributed. At present a new preparation of lead phosphate in colloidal form is being used in an attempt to avoid the reactions which take place. The theory on which this new preparation rests is based on the researches of Aub and Fairhall. They believe that in persons subjected to industrial lead hazards that the absorbed lead is transported in the blood stream in the form of a colloidal phosphate. Recently Professor Lewis, the chemist associated with Bell, made the statement that 85 per cent of the colloidal lead introduced into the blood for therapeutic purposes very rapidly attaches itself to the plasma phosphates and becomes a colloidal lead phosphate.

Bell is of the opinion that the lead attaches itself to the phosphatids in the cell membrane. Malignant tissue, like chorionic tissue, is richer in these constituents than normal tissue so that most of the lead which has a specificity for cells rich in lecithin and cholesterin should attach itself to the cancer cell. Unfortunately red blood cells are particularly rich in phosphatids, as are the cells of the two major organs of excretion, the liver and kidney, so they suffer greatly also. Clinically, symptoms of lead

poisoning are due to a condition of acidosis which mobilizes the stable lead phosphate into a soluble lead lactate, a toxic product. Professor Warburg of Berlin, in his work on the metabolism of the malignant cell, finds that this does not differ from that of the normal except in the case of sugars. Cancer cells have not only the power of oxidation, but also of glycogenesis, even in the presence of oxygen, so that glucose is split into lactic acid instead of being burned. In the use of colloidal lead phosphate, we have attempted to make use of this fact. We know that the latter preparation is stable, but in the presence of a localized acidosis as is found around new growths, it becomes soluble and then attaches itself to the cell wall locally as an insoluble product again. In order to intensify the reaction on the cell we have tried to increase the metabolism of the cancer cell itself by administration of glucose after the injection of the phosphate. That the lead is slowly broken up is seen in the lead line which appears and the stippling we observe, but this breaking up is so slow that the reaction is minimal.

REACTIONS

Judging from the severity of the reaction which are observed, it is obvious that the method is dangerous. When the drug is administered in the large doses recommended by Bell, the reaction is severe, while if smaller doses are used, a chronic type of lead poisoning results, manifesting itself by a progressive secondary anemia, a chronic nephritis with the urine diminished in quantity, loaded with albumin and casts. When the pure lead in a massive dose of 100 mgm. is given, the average patient goes through a regular sequence of symptoms. For at least thirty minutes after the injection nothing is noted except a tingling sensation of warmth, which seems to creep over the entire body. This is followed by a profuse perspiration and a nausea increasing to the point of vomiting, which may persist for two or three days. No instances of frank colic have been observed, though in a few patients there has been a vague feeling of indescribable abdominal discomfort. Usually in one hour there is a severe backache, evidently due to a congestion of the kidneys. The urine diminishes in amount, has varying quantities of albumin and casts, and may be loaded with red cells. In two instances the effect on the kidney was so severe that suppression and a complete anuria took place, while in a third patient a complete anuria came on six weeks after the treatment with phosphate, with fatal consequences.

The effect on the blood is especially marked. The white cells diminish but regenerate in a short time, so that the temporary leucopenia is followed by a mild leucocytosis. The red cells are rapidly destroyed, with a resultant anemia in which transfusion must be resorted to at times, for recovery. The day following the injection, the sclerae may be jaundiced, this evidently being due to a combination of red cell and liver destruction.

A few patients complain of localized pain in the tumor area, usually mild in type, though we have seen instances where it was so severe and continuous as to require the use of morphin. Where this has taken place, there usually is a noticeable diminution of the size of the tumor.

With the use of colloidal lead phosphate, we have obviated many reactions. There is no uncomfortable sensation incident to its introduction, though in two cases we have observed chills and fever immediately after administration. Ordinarily, there are no blood or urinary changes and if these do occur they are relatively mild. Indeed we have observed an increase in the number of red cells after its introduction, but after 200 mgm. have been used, stippling, indicative of early lead intoxication, takes place. In two instances where patients had a severe pyorrhoea, a typical lead line was observed, while a third patient who had had no lead for six weeks, suddenly developed a complete anuria which proved fatal in a week.

SELECTION AND CARE OF THE PATIENT

It is apparent that in dealing with such a potent remedy, the patient must be in good physical condition. The blood and urine must be thoroughly investigated and in order to control any of the undesirable sequellae, hospitalization is required. The routine physical examination, including weight, is supplemented by a complete blood, quantitative and qualitative urinary functional tests, which may or may not include a blood urea as the case demands. Despite these precautions, disasters may result, since it is extremely difficult to forecast the individual reactions. At present this is as unexplainable as is clinical lead poisoning occurring as it does in one person when many more individuals equally exposed show no toxic effects. Evidences of cachexia with failing strength are indications for rejection, since treatment in such individuals can do but one thing—namely, to hasten the inevitable.

DOSAGE

When to repeat the treatment must depend entirely on the condition of the patient. This is an individual problem and shows considerable variation, for one patient may be well in a week, while another may still show effects of the lead for six or seven weeks. The appetite should be normal and any residual weakness should have disappeared. If, at the end of four or ten days when there is no further evidence of lead intoxication, provided the urine is normal and the blood shows only a slight reduction in hemoglobin, and less than one stippled cell to three or four fields, it is safe to repeat the dose.

The dose is important. We have used the massive as well as the divided dose. The former resulted in a rapid dissolution in two instances, while the latter had little effect on the disease. If the treatment is entirely quantitative, as Bell suggests, it is reasonable to assume, other things being equal, that there should be little difference. With the new preparation, we give 80 to 100 mgm. at weekly intervals until three doses are given and then wait for two or three weeks. During this interval the patient may receive radiation. After the lead has been introduced the patient is kept quiet in bed, heat is applied to the epigastrium and nothing but fluids are allowed by mouth. The

patient is instructed to take at least 1500 cc. of water and is given 250 cc. of fruit juice, sweetened with glucose, every four hours. Morphin is given for pain. If, at the end of twenty-four hours, there is no evidence of toxemia, patients are put back on a light diet, with instructions to keep up the elimination. To overcome the reaction and to immobilize the lead, we have given calcium lactate and milk. If the heart shows evidences of failing, cardiac stimulants are resorted to; while for the anemic, a transfusion offers the most, if it is severe.

The effects on the growth are difficult to describe. In the breast, where the lesion is obvious, the tumor, if it is attacked, becomes nodular, somewhat softer and more movable. Nodules, which are confluent, may become discrete. They lose their reddish color and assume a yellowish brown appearance, and in a short time become umbilicated as does the pustule in smallpox. Large weeping areas discharge profusely for a day or so and then crust over, so that new skin may cover the entire area. Metastatic glands which are confluent may become individualized and freely movable as long as the patient's condition is favorable, though at the appearance of cachexia they may reassume their growth. Likewise, edema of the arm, incident to pressure on the axillary vein and obstruction of the lymphatic return, may almost disappear. Then again, we have seen patients who apparently were improving and in whom the localized area that we were observing showed evidence of regression, suddenly become cachectic; tumor growth crops out in a new place; this is especially rapid and always fatal.

CONTRAINDICATIONS TO TREATMENT

At first sight when the question of chemotherapy comes up in malignancy, hopes are raised for the successful combat of systemic cancer. These hopes are, however, short lived, for the amount of lead necessary to overcome a large and well-spread growth is prohibitive to the organism as a whole. Likewise, individuals showing evidences of metastatic involvement in brain or lung, are not favorable subjects, for the resultant edema that accompanies treatment in either set of persons will result in an acute cerebral edema in one instance and an acute pulmonary edema in the other, both of which may result fatally. In view of his experience in such cases, Bell does not advise treatment in patients where the extent of the growth is more than one-twentieth of the body weight or in persons with pulmonary or brain metastasis. In extensive widespread disease, autopsy has shown that treatment will completely destroy malignant tissue, but the patient succumbs to the general exhaustion that accompanies this type of therapy. Furthermore, patients with serious cardio-renal or pulmonary lesions are poor risks from a general standpoint, as they withstand metallic intoxication of any kind badly.

RADIATION AND LEAD

As the first patients whom we treated had all had heavy radiation, it was impossible to determine the effect of radiation on tissue containing lead. However, we did succeed in combining radiation and lead in a few of the later cases. Three of these showed marked changes for the better, but one of them, a periosteal sarcoma which was temporarily arrested, finally developed lung metastases with the usual rapid progress of the disease.

RESULTS IN EIGHTEEN CASES

Up to the present time we have treated eighteen cases. These have been of varying types of malignancy, and though we have had evidences of temporary improvement, only one case can be looked upon as an arrested case. In looking over our records, the one impressive feature of the work carried on is the fact that in order to get results with the use of lead itself, it must be pushed to the limit; those individuals having a marked general reaction and some local reaction show improvement. Where the dosage is divided so as to prevent acute constitutional effects, the lead is accumulative and does not seem to produce any clinical change in the malignant tissues. When the more stable and less toxic colloidal lead phosphate is used, the effect on the growth is very slow. With no evidence of any immediate damaging effect on the blood or kidney, the tendency is to push the treatment too rapidly, so that sooner or later intoxication and cachexia result. Whether the treatment exerts its effect by means of a thrombosis of the capillaries in the tumor, as Wood suggests, is a question. We are rather of the opinion that lead poisons the entire organism. All tissues, normal as well as malignant, suffer, but because of the inherent instability of the malignant cell, it suffers more than the normal. Healthy tissues recuperate if the patient is not cachectic, but if the patient's vitality is already greatly undermined, the treatment may hasten the final outcome rather than delay it.

Though our efforts have not been very successful, we feel that the failures have been due to the advanced stage of the disease in our patients. All of them have been hopeless from a surgical or radiotherapeutic standpoint as far as curability was concerned. In other words, it is doubtful if any form of therapy would have been of benefit. The treatment has considerable merit, but it will require more observation and experience to gauge correctly the dosage that will give the maximum benefit.

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DISCUSSION

FRANKLIN R. NUZUM, M. D. (Santa Barbara)—I have observed about thirty-five patients with a carcinomatosis who were treated with colloidal lead or colloidal lead phosphate. Of these, eight came to autopsy. I have studied the effect of the lead upon the malignant tissues and upon the structures of the body not involved by the malignancy.

To one patient with a large carcinoma of the liver, a single injection (about 80 mg. of colloidal lead) had been given. Death occurred twenty-four hours later. There were no gross or microscopic changes in the tumor tissue in this instance. In the seven other instances, larger amounts of lead had been given. Some had received a total of as high as 500-600 mg.

Grossly, a primary swelling of the tumor tissues followed the initial injections. This was followed by a regression which in two instances went on to the point where the tumor could no longer be felt upon palpation.

The first microscopic change observed was an area of hemorrhage in the center of the tumor growth. This was followed by softening of the central portion and finally by liquefaction. This process of liquefaction had extended almost to the edge of a primary carcinoma of

the liver, so that the tumor at autopsy represented a cyst 22 cm. in diameter, filled with a straw-colored fluid. The limiting membrane of the cyst was a fibrous tissue 1 cm. in thickness. On microscopic examination this membrane was found to consist of connective tissue cells, scattered through which were varying numbers of carcinoma cells.

The nuclear structure of the carcinoma cells became very dark in color following injections of lead, and also presented irregular outlines. The cytoplasm then became granular, and later disappeared entirely. These damaged cells finally became entirely liquefied. There occurred an increase in the number of connective tissue cells about the periphery of the tumor in many instances. Fibrosis is a process by which nature attempts to combat the malignant invasion and an attempt which is almost successful, as is illustrated by a certain type of tumor recognized pathologically as "leather bottle" carcinoma of the stomach.

As a complication of carcinoma of the lung treated with lead, the rapid breaking down of the tumor nodules resulted in a secondary broncho-pneumonia about the periphery of the tumors, and the pneumonia was responsible for death in two instances. On the other hand, in a third instance, very numerous metastases in both lungs became broken down, then fibrotic. This fibrosis now gives x-ray evidence of clearing, so that this patient is apparently reaching a clinical arrest.

The lead also had a destructive action upon some of the organs of the body not involved by the malignant process. I have studied the liver, kidneys and spleen particularly. A marked fatty degeneration of the liver cells starting at the periphery of the liver lobule and extending inward toward the central vein was noted in several instances. This progressed to such an extent that in one instance two-thirds of the entire liver was so damaged.

The lead likewise had a destructive effect upon the kidneys. The cells lining the first and second portions of the convoluted tubules presented a marked cloudy swelling and advanced farther to a fatty degeneration in some instances. The glomeruli were little if at all involved. Such kidneys presented an acute nephritis such as has been produced experimentally in laboratory animals with uranium.

The spleen in one instance had a dull gray slate color. The reticulo-endothelial cells lining the blood channels were here involved.

By quantitative methods we have recovered more lead from the liver and kidneys, than from a similar amount of malignant tissue. This indicates the care with which these patients must be treated, but it also makes evident the greater sensitiveness of the malignant tissues to the lead intoxication.

This pathological study makes apparent the destructive action of colloidal lead, and in our experience, the less toxic and equally efficient colloidal lead phosphate, upon carcinoma cells. This microscopic evidence, coupled with apparent clinical arrests in two instances, makes one hopeful that a real advance is imminent in the treatment of malignancy. Blair Bell's report of 23 per cent of clinical arrests in 250 patients suffering with inoperable malignancy, treated with colloidal lead injections, has caused this line of combat to be taken up by many clinicians and investigators, and has lent much encouragement to what has heretofore been a discouraging problem.

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Henry J. Ullmann, M. D. (Santa Barbara)—Our observations at Santa Barbara on the use of the metallic colloid led us to believe that its use is open to question, because of its marked toxicity on the organism as a whole; but because of the marked effect on some of the tumors followed moderate dosage, we are encouraged to go on with the work. All the evidence at hand, both from our own experimental work and the work of others presented in the literature, points to the conclusion that lead can only be transported in the blood stream as a highly dispersed or colloidal phosphate. This phosphate may exist in two forms, depending on the reaction of the supporting medium. In the presence of the normal alkalinity of the body, it exists as the tri-lead, orthophosphate, but in the presence of only moderate acidity or equilibrium conditions, it goes over into the one hundred times as soluble di-lead salt, also the solubility of the di-lead salt is very marked in even small quantities of lactic acid. Because of these facts, we can see no reason why any other form of lead than the orthophosphate should be used and our results have borne out our hopes. It is infinitely less toxic and in every way as efficacious in its effects on malignant tissue. We have been able to give it to patients with a kidney function of zero, without apparent injury. Another advantage is that it is stable and keeps more or less indefinitely at room temperature.

Our experience at Santa Barbara throughout the past year leads us to draw certain conclusions. These are that the material shows sufficient promise when used in conjunction with radiation to warrant intensive investigation to either develop its method of use or to prove it useless at the earliest possible moment. Also that it should not be used outside of a hospital equipped with every facility for thorough clinical investigation and that patients subjected to this treatment should be hospitalized and told that the treatment is equivalent to a sanitarium treatment for tuberculosis—that is, that they must remain for some time under observation. We also feel strongly that this treatment should be confined to those physicians who are both experienced clinicians and radiologists or an experienced clinician and a radiologist working in close cooperation. If this be not done, very unfortunate accidents may occur.

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F. F. Gundrum, M. D. (Capital National Bank Building, Sacramento)—It is a matter of gratification that what may be called the experimental phase of the treatment of cancer with lead has fallen into the hands of such careful scientific observers as Doctor Soiland and other colleagues. I believe the rest of us must wait with patience the final judgment of its efficacy arrived at through unbiased observation of results over a considerable period of time.

It is interesting, too, that Weller, of Ann Arbor, has recently brought to our attention the "Traite du Plomb" of Thomas Goulard, "Royal Professor-Demonstrator in Surgery, Royal Demonstrator of Anatomy of the College of Medicine, Member of the Royal Academy of Science of Montpellier, etc., etc.," published in 1760. M. Goulard had, for a considerable time, been interested in therapeutic use of lead in a variety of conditions, his first experience having been with urethritis. In the fourth chapter of this treatise of 1760, we find a discussion of the use of lead in the treatment of neoplasm. Here the author reviews the opinion of his predecessors from Hippocrates, that external applications are useless in the treatment of cancerous tumors. "This opinion," he states, "is the cause of these unhappy sufferers being left a sacrifice to the most horrible pains, which no medicine can calm, and which frequently conduct them to their graves. From hence one may judge of what importance it would be to discover a medicine, capable not only of relieving, but even of curing this otherwise invincible and cruel disorder. Now I have the comfort to think that I have discovered such a medicine in the extract of Saturn." He fortifies his claim to success in the treatment of cancer by nine observations which are concerned with twelve patients. Goulard was considered somewhat of a charlatan by his contemporaries, and when the University of Montpellier celebrated its centennial in 1921, Thomas Goulard was not mentioned among those who had added luster to the seven centuries of surgical practice and teaching at that famous school. This feeling probably arose through his great care to keep the nature of his "Extract of Saturn" a secret. Nevertheless Goulard enjoyed great vogue in his day, as is evidenced by his numerous titles and by the fact that his "Traite" was translated into German and French.

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Orville N. Meland M. D. (closing)—The results, as you see, are not encouraging, but it must be remembered that only terminal cases have been treated. We feel, however, that the work should go on, since we have seen just enough improvement to make it worth while. When one reads of Blair Bell's results and finds that he has thirty patients who by all rules should be dead, and who are now clinically well after the use of lead, it seems

that we are on the right track. Undoubtedly Bell met many discouragements before he was able to get the results reported. Therefore, we are of the opinion that when we are more familiar with the treatment, the percentage of improvements will also increase.

UNUSUAL URINARY CALCULI*

WITH CASE REPORTS

By William E. Stevens, M. D.
San Francisco

Discussion *by H. A. Rosenkranz, M. D., Los Angeles; Miley B. Wesson, M. D., San Francisco; Wirt B. Dakin, M. D., Los Angeles.*

SINCE the dawn of medical history the subject of urinary calculi has been one of great interest, but it is only within the last quarter of a century that the advent of the perfected cystoscope, the roentgen ray, pyeloureterography, stereoscopy, the opaque, wax-tip and wax-bulb catheters and functional kidney tests have elevated the diagnosis of this condition from the realm of guesswork to that of an almost exact science. Urinary stones if present, although occasionally overlooked, in almost every instance through careful investigation will be revealed. If sole reliance is placed upon the x-ray, some stones, especially those composed of pure uric acid, cystin, and xanthin, will often escape detection. There is still no unanimity of opinion regarding the origin of urinary concretions, although most investigators agree that infection and obstruction are important etiologic factors.

Having been fortunate enough to encounter some unusually interesting cases of calculi in various portions of the urinary tract, I am tempted to think them worthy of presentation.

CASE REPORT OF NEPHROLITHIASIS

The most interesting case of nephrolithiasis that has come under my observation was that of a stout man, 57 years of age, whose principal complaint was pain in the left lumbar region. Periodically, for many years he had noticed blood in the urine. At the age of fifteen he had contracted lues and had received treatment over a period of three years. Since that time, numerous blood and spinal fluid examinations had been negative and no symptoms suggestive of syphilis had occurred.

His urine contained many pus and red blood cells. Cystoscopy showed an injected bladder mucosa. The urine from the right kidney contained many leukocytes and an occasional red blood cell; that from the left a very occasional red blood cell. The right kidney urine contained numerous staphylococci; the left was culturally negative. Radiography revealed an enormous coraliform calculus forming a complete cast of the right kidney pelvis involving the major and minor calices, and closely resembled the pyelogram of an injected kidney. The left kidney was large and its pelvis within normal limits, considering the size of the organ. The films also showed Paget's disease of the sacrum. Twenty cc. of urine from the right kidney contained 7½ per cent of phenolsulphonephthalein; that from the left contained 30 per cent of phenolsuhphonephthalein in 50 cc. of urine. The right kidney urine contained 0.002 urea, and the left 0.002 minus. The total phenolsulphonephthalein output was 50 per cent in two hours and ten minutes.

One hundred cc. of blood contained 40.5 mg. of urea.

As the patient also suffered from arteriosclerosis, angina and diabetes, and the pain was on the left side, operation on the right kidney was not considered justifiable. The pain in the back disappeared in a few months, but he began to experience pain in the left upper quadrant a short time later. Films of the uninjected kidneys and pyeloureterograms at this time showed no change from the previous pictures except a small elongated density possibly due to a stone in the lower portion of the left kidney. It was not likely that the pain in the left upper quadrant was due to that condition. No stricture was found on calibration of either ureter. The phenolsulphonephthalein, indigo carmin and comparative quantitative urea estimation tests now showed better function in the right kidney.

Sixteen months later he again consulted me complaining that he had not been able to attend to his business for over a year because of frequent attacks of pain in the left upper quadrant. He had also noticed more blood and clots in the urine. Some bleeding followed the introduction of the cystoscope. There was an intra-urethral enlargement of the lateral lobes of the prostate gland. Somewhat bloody urine was obtained from the catheter in the left ureter. Functional tests again showed better function in the right kidney. The x-ray showed faintly the same small shadow in the left kidney region. This had not increased in size. The pyelogram now showed slight enlargement of the left kidney pelvis and distinct blunting of the calices. No obstruction was found on calibration of the ureters. The total phthalein output was 30 per cent for two hours, the blood urea 52.5 mgs. per 100 cc., the blood sugar 157.2 mgs. per 100 cc.

Gastro-intestinal plates were negative. The cardiologist reported a marked aortitis, principally of the ascending aorta, and arteriosclerosis affecting most of the vessels of the body. The pain improved under intravenous injections of sodium iodid and diet, but recently reappeared and became more severe. The patient refused further examination or treatment.

This patient died a few days ago of cerebral hemorrhage. At autopsy, instead of one large stone five articulated calculi were found in the pelvis of the right kidney. The inferior calyx of the left kidney contained a calculus the size of a pea.

The jejunum was markedly distended and hemorrhagic and the pain in the left upper quadrant was probably due to this condition.

The impossibility of always determining the exact number of renal calculi by radiography is demonstrated in this case.

RENAL CALCULI REPORTED IN THE LITERATURE

The largest renal calculus which I have found recorded in the literature was reported by Pohl. It weighed 2 kilograms. The largest kidney stone which has been removed surgically, however, was reported by E. Tricomi. It weighed 804 grams.

Comment—The unusual features about my case were: the size of the stones in the right kidney; the absence of pain or symptoms of obstruction in the right kidney; the fact that functionally the right kidney was the better of the two organs. The question as to the cause of the pain in the left upper quadrant was also of interest. The possibility of a renorenal reflex was considered previous to autopsy (Plate 1).

CASE REPORT OF BILATERAL GIANT URETERAL CALCULI

An emaciated, sallow man, 33 years of age, complained of attacks of sharp, shooting pain in the left lumbar region, and frequent urination. The pain was occasionally dragging and throbbing in character. It had occurred more frequently during the past year and had been continuous for the past month. His appetite was poor and he was rapidly losing weight and strength. He was told that an x-ray taken three weeks before coming under my observation had revealed a stone in the left ureter. He had also had pain

* Read before the California Medical Association at the Fifty-Sixth Annual Session, April 25-28, 1927.

Plate 1—Cast of a right kidney pelvis formed by calculi.

Plate 2—Pyelogram, same case. Both kidney pelves injected with 12½ per cent sodium iodid solution.

in the right lumbar region, of one week's duration, a year previously. Otherwise his past history, as well as his family history was not significant.

A catheterized specimen of bladder urine contained numerous pus cells, a moderate number of blood cells and a heavy cloud of albumin. Rectal palpation revealed a large indurated object which was apparently in the terminal portion of the left ureter, and another body of similar consistency probably located in the right ureter. Cystoscopy revealed a somewhat injected bladder mucosa. It was impossible to insert a catheter beyond the left ureteral orifice or more than 3 cm. into the right ureter. No indigo carmin appeared on either side within fifteen minutes after intravenous injection. The x-ray revealed large areas of calcification on both sides of the pelvis, probably due to stones in the lower third of the ureters. The shadow on the left was larger than that on the right side.

Diagnosis: Bilateral, giant ureteral calculi.

Following extraperitoneal exposure of the left ureter an incision was made just above the upper end of the calculus. Owing to the enormous size of the latter and its close adherence to the ureteral wall, forceps were applied with great difficulty. Even then it was impossible to dislodge the stone, and it was only after crushing with heavy bone forceps that the fragments were removed. The latter weighed 44 grams. About 6 grams were lost. Improvement began almost immediately after operation, and the patient left the hospital fourteen days later with but very slight drainage from the lower angle of the wound.

Thirty-three days later he again entered the hospital. The right ureter was exposed in the same manner as the left, and one large and two small stones removed. The largest stone was extracted with some difficulty because of its size and intimate adherence to the wall of the ureter. It weighed 18 grams. The patient left the hospital fifteen days later with the wound almost closed. It was now possible to catheterize the ureters to the pelves. Both kidney urines contained numerous pus cells. The patient's strength and weight increased rapidly and he now voids at normal intervals and has returned to work. The urine from both kidneys still contains numerous pus cells, due to chronic pyelonephritis.

URETERAL CALCULI REPORTED IN THE LITERATURE

Abell reported a case of bilateral ureteral lithiasis, the stone in the right ureter being 7.5 cm. in length and 7 cm. in circumference and weighing 24 grams. A small stone in the left ureter weighed 2 grams. Collison reported a case in which two calculi formed a cast of almost the entire left ureter. The upper calculus weighed 840 and the lower 440 grains. Bovee (quoted by Abell) removed a ureteral calculus 2.75 by 1.75 by 1.15 inches in size. It weighed over 87 grams. Specklin (quoted by the same author) removed a stone from the left ureter weighing 51 grams. Specklin found reports of an enormous calculus removed by Federoff which weighed 52 grams. Rovsing reported a calculus 18 cm. in length and the width of a bean; the weight was not stated. Israel reported a stone weighing 54.4 grams and another 17 cm. long and 9 cm. in circumference; the weight was not given. Lloyd reported a calculus 5½ inches in length and 2½ inches in circumference. Norris (also quoted by Abell) recorded a case in which the calculus was nearly 6 inches long. Buerger reported a case of ureteral calculus 10 cm. in length, another 2⅛ inches long by 1⅛ inches in width at its widest part. Maynard Heath (quoted by R. E. Cumming) reported a ureteral stone 6 inches long by 1 inch in diameter which produced no subjective symptoms.

It is a curious fact that the majority of giant ureteral calculi have been found in the left ureter.

Comment—Large unilateral stones have been reported, but although about 10 per cent of ureteral stones are bilateral, my case is the only one

that I have been able to find in the literature in which giant calculi occurred simultaneously in both ureters (Plate 2).

TWO CASE REPORTS OF PROSTATIC CALCULI

Case I—A laborer, 32 years of age, entered the hospital suffering from frequent and painful urination. He also complained of soreness in the perineum (worse at night, pain in both lumbar regions, worse on the left side), and diarrhea. A sister had tuberculosis. He had contracted gonorrhea at twelve, and again five years previously. His symptoms began one and a half years before coming under my observation. He stated that he had passed some gravel seven months ago. For the previous six days it had been impossible for him to work on account of weakness and diarrhea.

On attempting to introduce a soft rubber catheter an obstruction was encountered in the prostatic urethra and agonizing pain of several minutes' duration resulted. On the following day an unsuccessful effort was made to introduce the cystoscope, first under local, then under general anesthesia. A metallic click was elicited by contact of the instrument with a hard foreign body, which completely obstructed the canal. Seven hours later, no urine having been voided and the abdomen being distended and painful, the urethra was opened through the perineum and an enormous calculus grasped with forceps. During the attempt at removal the stone was crushed. Even then it was impossible to remove some of the larger fragments which were wedged in the urethra just anterior to the neck of the bladder, and as no urine escaped, it was considered advisable to open the bladder suprapubically. All fragments of the calculus were then extracted and a retention catheter readily inserted through the external meatus into the bladder. The patient was out of bed seventeen days after operation; he passed urine through the urethra without discomfort, and the wounds healing rapidly.

Comment—This case is of interest because of the enormous size of the prostatic calculus. It weighed over 50 grams. Formed primarily in the upper urinary tract it probably lodged in a pouch or diverticulum of the prostatic urethra, there increasing in size. This case is one of false prostatic calculi. True prostatic calculi, on the other hand, are formed in the gland proper, are much smaller and are usually multiple. The following is an example of this type.

Case II—A man, 38 years of age, complained of a slight urethral discharge and an uncomfortable sensation in the perineum. On rectal examination several small hard bodies about the size of large grains of wheat could be palpated in the prostate gland. On pressure a sensation of crepitation was elicited. The prostatic fluid contained a large number of pus cells. As the amount of discomfort was not great and the patient was otherwise in good health, I did not insist upon operation.

PROSTATIC CALCULI REPORTED IN THE LITERATURE

DeWitt Stetten reported the removal of a calculus weighing 1¾ ounces. Genouville reported a prostatic calculus weighing 200 grams. Nicholich removed a prostatic calculus weighing 320 grams. Judd and Crenshaw reported a stone in the prostatic urethra one-half inches in diameter and another large stone in which the urethra was dilated to the size of the bladder. Ashhurst found two stones in the prostatic urethra, one 8 by 4.5 by 4 cm. and behind that another 4.5 by 4 by 3 cm. in size; an incorrect diagnosis of carcinomatous prostate had been made in this case. Sabitier referred to a case of calculus in the prostatic urethra weighing 3 ounces and Dumerill saw one nearly three times as heavy. MacKenzie and Seng reported an unusual case of a true prostatic calculus which weighed 26 grams, and Pugh also reported an interesting case of true prostatic calculi in which fifty small stones were removed from the lobes of the prostate.

CASE REPORT OF URETHRAL CALCULI

The patient, a native of the West Indies, aged 41 years, a steamship steward by occupation, came to me complaining of difficult and painful urination, dribbling, and a thick white discharge from the urethra. He also suffered from pain in the lumbar region and was obliged to walk with a cane. He had gonorrhea in 1889, 1900, 1908, and in 1911. He admitted having had a sore on the penis in 1889 and again in 1908. Mercury and potassium iodid were taken for one month after the appearance of each sore.

The present illness began with the foregoing symptoms nine months before coming under my observation. He had not had intercourse for one month previous to the time they appeared. One month later tremor of the lower extremities appeared and he began to experience difficulty in walking. The following month a physician passed a number of sounds, but without improving his condition.

In February, 1912, while at sea and unable to secure medical attention, he was obliged to pass a piece of telephone wire into the urethra before urination was possible. Frequently, after the use of this wire, several small calculi would be passed. A few months later radiographic examination revealed a number of characteristic calculi shadows along the urethral canal. None were seen in the bladder or upper urinary tract.

The treatment at that time consisted of perineal section, by means of which removal of the calculi was effected. For a short period subsequent to this operation free micturition was possible, but gradually the act of urination again became difficult and the dysuria, urethral discharge and pain in the lumbar region increased in intensity. A 19 F sound passing with difficulty through a strictured urethra elicited a metallic click at several points along the canal. The discharge from the meatus contained a large amount of pus, but no gonococci. Radiography at this time showed numerous calculi in all portions of the urethra, but none in the bladder or kidneys. A positive Babinski, greatly exaggerated patellar reflexes and marked clonus of the flexor muscles of the leg were present. The Wassermann was positive and the difficulty in walking, as well as the pain in the back and legs, was without doubt due to the specific myelitis.

Owing to the fact that operative removal of the calculi had been succeeded by a brief remission of symptoms only, the following slower method of treatment seemed to offer the prospect of better and more permanent results. Most of the larger stones were grasped with forceps and removed through the urethoscope, while the smaller concretions were crushed or were passed following dilatation of the urethra with sounds. Treatment was very painful in the beginning, but the urethra rapidly became tolerant, until finally the introduction of large instruments became feasible. After their use smaller calculi frequently escaped with the irrigation fluid.

One stone located in the navicular fossa could be palpated from without, but was not seen through the urethroscope or detected with the sound. This finally came away after the passage of the cystoscope, introduced for the purpose of catheterizing the ureters in order to obtain urine for examination, reassurance of the absence of foreign bodies, and to make comparative tests of the renal function.

One month after the conclusion of treatment the patient voided clear urine freely and without discom-

fort and no calculi could be detected on palpation, urethroscopic or radiographic examination. Cystoscopically the bladder was normal, with the exception of a slight cystitis. Notwithstanding intensive antiluetic treatment the symptoms due to the myelitis remained unimproved. The patient passed from my observation and, I am informed, died a few months later from some intercurrent disease. The postmortem revealed a definite myelitis. No concrements were found in the upper or lower urinary tract.

No calculi could be detected in the upper urinary tract at any time and the patient had never suffered from renal colic.

URETHRAL CALCULI REPORTED IN THE LITERATURE

Rathbun reported an unusual case of a urethral calculus 10 cm. in length and 3 cm. in diameter which had formed around a piece of wire. Kurbaton published a case in 1885 in which a urethral calculus weighed 390 grams. Angelo Menish reported the removal of a stone the size of a hen's egg which weighed 94 grams. Boger recently reported an interesting case in which, following urethrotomy, twenty-two stones were removed from the urethra.

Comment—My case is unusual because of the large number of urethral stones, their wide distribution and the fact that they probably formed in the urethra.

CASE REPORT OF CALCULI IN THE FEMALE URETHRA

Stones are rarely found in the female urethra because of the shortness of the canal, its lesser curvature and its greater distensibility. Although occasionally originating in the urethra, the majority have descended from the upper urinary tract and become lodged in a diverticulum or behind a stricture either at the external meatus or in the lumen of the canal.

A woman 50 years of age entered the Stanford Women's Clinic complaining of occasional attacks of painful urination. On vaginal palpation a hard mass was detected in the urethra just anterior to the bladder sphincter. The urethroscope revealed a large calculus about 3 cm. from the external meatus. On attempting to remove the stone with urethral forceps it was broken into a number of fragments. Some bleeding followed this procedure. One week later the patient was free from symptoms and urethroscopy was negative. No calculi were found on radiography of the upper urinary tract.

CALCULI IN THE FEMALE URETHRA REPORTED IN THE LITERATURE

Caballero in 1915 removed a stone from the female urethra weighing 40 grams. He stated that only eighteen other cases of urethral calculi in this sex had been reported to that time. Basemore found a urethral calculus in a girl 7 years of age. Yelloly in 1815 stated that Heading of London removed a calculus weighing almost 3½ ounces. The largest calculus that has been removed from the female urethra was reported by Dunglas in 1859. It weighed 7 ounces and was 8 inches in circumference. The patient died twelve days after operation.

Plate 3—Bilateral giant ureteral calculi.

COMMENT

I will make no further mention of the diagnosis or treatment of urinary calculi except to emphasize the value of stereoscopic pictures, in the presence of shadows in the kidney or ureteral regions; and to stress the importance of postoperative treatment to clear up infection and overcome obstructions due to strictures, kinks of the ureter or other predisposing factors. In the absence of subjective symptoms and with negative urinary findings I do not believe that operation is indicated for stones which are not increasing in size. These patients should be examined frequently, and ordinary pictures as well as pyelograms should be taken from time to time.

Flood Building.

DISCUSSION

H. A. Rosenkranz, M. D. (1024 W. P. Story Building, Los Angeles)—Doctor Stevens' unique case reports and valuable review are a distinct addition to our knowledge of urinary calculi. The author's judgment in not operating upon the elderly man with bilateral nephrolithiasis is to be commended. That the patient died without operation again emphasizes the fact that calculus cases are usually a sign of either infection in the urinary tract or elsewhere or both, and such focal infections having a direct and marked effect upon every cell of the human organism, and especially upon the cardiovascular system, these cases must be judged with great care from the standpoint of operative risk.

They are the patients who surprise us with postoperative myocarditis.

As Doctor Stevens has pointed out, pain is a capricious symptom. Some five years ago I removed a walnut-sized stone from a kidney pelvis and the only pain that the patient had experienced was localized halfway down the ureter and was not referred anywhere.

It used to be said of Israel years ago that he was the only man who had palpated a renal calculus. At the Los Angeles General Hospital several years ago there was a woman on my service whose kidney consisted of a thin sac filled with stones about one-half inch in diameter. Previous to operation distinct clicks could be distinctly felt and heard on palpation as these calculi grated past one another. This patient had one of the worst sets of teeth that I have seen. I believe, after ruling out obstruction to urinary outflow, that infected teeh are the most important factor in the etiology of renal calculi.

As regards diagnosis: The symptoms of renal calculus and other renal conditions are sometimes simulated by pneumonia of a lower lobe. Four of such patients have passed through my practice during the past seven years. The first three were diagnosed without operation, but the last one occurring about a month ago and diagnosed by one internist as a typhoid spine (patient presented a typical typhoid facies) and by others as perinephritic abscess; with urgent recommendations written all over the chart by consultants to operate for perinephritic abscess. The case proved to be one of lower lobe pneumonia with pleurisy. The urine was negative.

A diaphragmatic pleurisy must also be borne in mind.

Physicians should not be misled by stomachic colics which sometimes overshadow the renal symptoms. These patients sometimes assist the unwary into making a wrong diagnosis by insisting that they ate food that disagreed and that their condition is primarily a gastro-intestinal affair.

As regards return of function after calculus removal it is of noteworthy interest that kidneys with a very low phenolphthalein output may regain complete function after removal of an obstructive calculus. Nephrectomy should be avoided in most cases.

Doctor Stevens' statement that true prostatic calculi are formed in the gland proper and are usually small and multiple, is borne out by the following patient upon whom I operated at the Los Angeles General Hospital about twelve years ago: An elderly man with an enlarged very crepitant prostate per rectum with symptoms of prostatism was found on perineal section to have a prostate consisting of a large sac stuffed completely with small pebbles from the size of a linseed to a pea. I washed these out through the perineal incision and found that the prostatic cavity encircled the urethra posteriorly. I cleaned the cavity without damaging the urethra. The patient recovered promptly with no other sequelae than a tight prostatic urethra which it was necessary to dilate occasionally. I believe he was some 70 years old and he resumed his occupation of type actor in the movies. X-ray had disclosed the prostate as a large regular mass.

During my student days I assisted Dr. A. J. Scott, Jr., at the North Broadway Clinic in removing with an ordinary thumb forceps a lima bean-sized calculus from the anterior urethra of a male baby that had been suffering from a complete and enormous urinary retention.

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Miley B. Wesson, M. D. (1275 Flood Building, San Francisco)—A paper on urinary calculi generally furnishes at least one unusual or startling report. Two such cases are found in this article: bilateral giant ureteral calculi and primary urethral calculi.

The cause as well as the stones must be removed, otherwise there will be a recurrence. Some months ago my attention was called to such a case, a giant left ureteral calculus having been removed eight years before through an extraperitoneal incision. A recent roentgenogram showed two vesical stones (one 9 cm. by 5 cm.), but at operation only the small stone was found in the bladder. A careful search with a probe located the large stone in what was thought to be a diverticulum but which proved to be the ureter. The orifice was cut and dilated and the soft stone crushed and removed in fragments. The primary ailment was a prostatitis and seminal vesiculitis and, as would be expected, in due time a median bar developed, a residual of urine then appeared and shortly thereafter became infected. This was responsible for the first giant ureteral calculus and its reformation eight years later, to say nothing of the persistence of the suprapubic fistula.

Calculi are rarely primary in the urethra, but the inflammatory areas between tight strictures, as described by Doctor Stevens, is an ideal place of origin.

Stones in the prostatic urethra generally arise in the bladder and on their way out are caught in pockets. The patient's usual complaint is an acute retention, the ball-valve action of the stone not being perfect. The diagnosis is made by the click of a silver instrument as it meets with the obstruction. This condition is not unusual in cases that have a contracture at the vesical orifice, following suprapubic prostatectomy. The treatment is very important. The temptation is to grasp the offending stone with alligator forceps (passed through an endoscope) and pull it out. One of my colleagues removed a pea-sized stone this way sixteen years ago damaging the external sphincter, and the patient is still dribbling. An attempt should be made to crush the stones through an endoscope with a pair of Dittel's (alligator) forceps that have had the blades shortened. If this is not successful then a suprapubic incision should be made and the stones removed through the internal sphincter. A 30 F. sound passed through the urethra is often of assistance in pushing the stones into the vesical orifice.

Prostatic calculi are shot-like and lie in the prostate tissue, and should be removed through a perineal incision. They are not urinary calculi, but are usually composed of cholesterin and arise by deposit from the secretion present in the ducts, just as urinary calculi arise from urine.

A not uncommon finding is a silent stag-horn calculus in one kidney and a very small stone in the other, with marked symptoms and rapid destruction of tissue. Before the days of routine pyelography, or an appreciation of the renorenal reflex, many comparatively good kidneys were sacrificed because of a large stag-horn calculus. Each case is a distinct problem, but conservatism should be the keynote of treatment. A nephrectomy for stone, even when the opposite kidney is perfect, is a serious undertaking, for years later the "good kidney" will probably prove to be a stone producer.

All surgeons are interested in kidney stones: (1) because of the amount of renal destruction that occurs in the presence of a stone; (2) the frequency with which so-called silent stones are not recognized; and (3) the number of conditions that can be erroneously diagnosed as renal stone.

The patient, however, is interested in how to prevent the recurrence of stones, for unfortunately they practically always do recur. There are three factors involved in stone formation: (1) the mechanical, (2) the bacterial, and (3) the physicochemical. Fifteen per cent of cases of hypertrophy of the prostate are associated with stone formation because of the residual urine present. Since the work of Rosenow we have been inclined to blame all kidney stones on infected teeth. Recently the chemists have decided that a disturbance of the balance between urinary colloids and crystalloids is an important factor. An alteration of normal protective colloid of the urine may result in the precipitation and deposit of urinary crystals which had been previously held in a supersaturated solution.

For unknown reasons some people are "stone formers," and then without any discoverable reason cease

to be such. Since relapses are prone to occur, conservation of kidney tissue, as emphasized by Doctor Stevens, should be the surgeon's first consideration.

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Wirt B. Dakin, M. D. (607 Chapman Building, Los Angeles)—Doctor Stevens' paper is very interesting and serves well to remind physicians to be on their guard for symptomless urinary calculi. The Japanese state that one picture is equal to a thousand words, and so it is with Doctor Stevens' radiographs.

An interesting calculus patient came under my observation on January 1, 1926. His family physician had been giving him prostatic massage for enlarged prostate for several months. He offered the usual symptoms of frequency, dribbling, dysuria, prostatic pain. If the attending physician had used a metal catheter he would have made a diagnosis at his first visit, for he would have elicited the characteristic metallic click.

The bladder contained a vesical calculus so large that there was not sufficient space for urine and he had urinary dribbling. If the metal catheter is carefully used, no damage will be done and many startling diagnoses will be made at the first visit. This will, of course, hasten a decision for x-ray pictures.

X-ray plates not only showed this enormous vesical calculus, but also a shadow in the right kidney outlining the kidney pelvis so well, that the x-ray department inquired if we had injected the kidney pelvis before sending the case to the x-ray department. This enormous stone in the right kidney was entirely without symptoms, and we did not molest it. Kidney function was excellent after we had finished his two-stage prostatectomy and, of course, removal of the vesical calculus.

Doctor Stevens' case of prostatic calculi being diagnosed as carcinoma of the prostate is very interesting and I am sure was a happy termination for the patient. The routine attempt to follow these cases in an earnest endeavor to clear up their infections and cure strictures is as important as any of the previous operative procedures.

OBSTETRICS IN THE HOME*

By Harry S. Fist, M. D.
Los Angeles

Discussion *by John C. Irwin, M. D., Los Angeles; J. W. Farrell, M. D., Los Angeles; E. T. Rulison, M. D., Sacramento.*

WITHOUT decrying efficient hospital service for abnormal childbirths, a plea is here entered for more efficient care of normal births in the home.

The entire warp and woof of our civilization is woven about the home. Home consists of mother, father, and children, together under one roof. So far as possible they should be kept together.

Home is the logical place for the arrival of the new child. Here in her own bed, her family around her, the patient is in familiar surroundings and away from the infectious organisms often numerous around a hospital. When the mother is away from her loved ones, unable to see callers except at fixed hours, her entire routine of life changed, and with little to do but worry about expense and her family at home, there is not necessarily the maximum of progress. Babies rarely do as well in institutions. Mothers' milk is better when the patient is contented.

The hospital, promoted by necessity, is truly a wonderful institution so long as it efficiently serves the community, for here many lives are saved; but there are often urgent reasons why a woman cannot go to the hospital to have her baby. The delivery room, all ready for use, is a magnet which attracts the doctor. Abnormalities previously overlooked are here less dangerous. Patients must have thorough, detailed care; and especially is this the case if they are not to be delivered in the hospital.

The trend of modern obstetrics has been toward the saving of time and trouble—for the obstetrician. It is high time that the safety and comfort of the patient be given first consideration. In the hospitals interns or nurses keep watch and call the doctor when the baby is almost born. The obstetrician's time may thus be saved. It may also conserve his time to use forceps, or to reach into the uterus, turn the baby and pull it out; but such procedures should not be undertaken except in the interests of mother and infant. Cesarean section should not be done unless definitely indicated.

Admittedly the following demand hospital management: first labor, disproportion between pelvic canal and child, hemorrhage, multiple pregnancy, high blood pressure, urine changes, previous cesarean section, heart or lung trouble, serious constitutional disease, large varices of vulva, nervous or excitable patient and previous difficult labor.

The percentage of grossly abnormal cases is very low. Asa B. Davis has stated that [1] "Ninety per cent of pregnant women should be under careful observation, but aside from a few simple observations and instructions, should be treated to a very generous share of masterful letting alone."

Prenatal attention must be given each patient. Not all patients can go to the hospital. The presence of small children, or other reasons quite as pressing, may force the birth of the baby in the home. Hospital care entails considerable expense, often out of all proportion to the patient's ability to pay.

Edward A. Schumann writes,[2] "A complete study of every patient is in some respects ideal and is a great safeguard against the overlooking of an incipient or disguised pathological condition. However, there are many illnesses of so obvious a character, their diagnosis so comparatively simple, and the indications for their treatment so obvious, that the most intensive laboratory studies play no part whatsoever in the management of the case or in the prognosis, although the expense to the patient is immeasurably increased. I know of one institution where complete basal metabolism studies are required of every obstetrical case, whether normal or otherwise." Strict hospital economies are necessary if costs are to be reduced.

If every mother came to the hospital for delivery, the number would far exceed the total bed capacity. Government subsidy of maternity beds, though unsatisfactory in many respects, holds out some hope of partial solution, and the Shepherd-Towner legislation, pernicious in many ways, was evolved in the hope of solving this problem.

Self-preservation demands the reproduction of a fit race. The lowering birth rate of the great middle class causes grave concern. False educa-

* Read before the Obstetrical branch, Los Angeles County Medical Association, December 14, 1926.

tion has had much to do with this, causing women to fear, "The dangers and suffering of childbirth," and to avoid pregnancy by contraceptive methods. The economic problem presented by the birth, and later the food, clothing and education of the child, has been a factor in causing the wrongful use of birth control. Many young couples avoid childbirth early in married life, only to discover, to their sorrow, that they want a baby when it is too late! The fear, usually groundless, that childbirth will be complicated by hemorrhage, infection, toxemia, or laceration, has led many women to avoid conception.

Present-day mothers need not suffer, as did the preceding generation. Modern science has brought means of relief which should be universally used.

The normal patient can very properly be delivered in the home. Most babies are now born in the home, where they are attended by the general practitioner or the midwife. Much might be done to lower our appalling obstetrical mortality if these persons were to receive instructions and have their work supervised. Many mothers and babies suffer or die chiefly from infection, which we know to be largely preventable. Cleanliness will minimize the danger from bacteria. The attendant must realize the responsibility of this kind of work. He must know the actual details of careful technique. With proper training, and a certain amount of interest, every difficulty may be removed, providing the obstetrician is willing to use the necessary effort. If the best care possible be given in the home, the problems of finances, care of the home, danger of infection, are to a large extent solved.

The out-patient departments of teaching institutions show far lower mortality and morbidity rates than the hospitals, where most of the complicated cases are delivered, and lower than occur in private deliveries in the homes. Proper care before, during, and after labor is the answer.

As the result of prenatal care, the condition of the patient is known. A detailed history and a thorough, comprehensive physical examination are essential. Every pelvis must be measured, every heart and chest studied. Urine examinations, blood pressure determinations, estimation of hemoglobin and white blood cells, are made in the office. Vaginal examinations are not made at the time of delivery. Operative procedures are avoided so far as possible. Postpartum care involves painstaking attention to every detail until involution is complete. Systematized care can be given these patients if preparation is made for it.

Much of adaptability and ingenuity are required to convert an ordinary bedroom into a well-appointed delivery room, using only such supplies as may be easily carried. The family must know what to provide, and all should be in readiness. When called, the physician and assistant must respond at once, and bring sterile goods and other supplies. No procedure may be attempted which carries the risk of infection.

The physicians who refuse to deliver obstetrical patients outside of the hospital are within their rights. Women who must bear their babies at home should have good care, nevertheless.

Leading obstetricians express various opinions as to the feasibility of home obstetrics, as witness:[3]

A. B. Davis: Any case which can be conducted in a hospital can be taken care of in the home.

J. B. DeLee: It is possible to conduct properly labor in the home.

B. C. Hirst: Refuses to take patient unless she is going to the hospital for confinement.

P. B. Bland: Obstetric morbidity and mortality is less in private homes than in hospitals—because complicated cases are treated in hospitals. Urban obstetrical morbidity and mortality is higher than suburban. Better maternity work may be done in the hospital. Cannot be properly conducted in private home.

J. W. Williams: Attend no abnormal patients in out-patient service.

COMMENT

Hospital obstetrical practice has improved. Most of the abnormal cases are delivered in the hospital, but the majority of births occur in the home and it is here that improvements in service must be made. Home obstetrical practice can be made safe, but care and preparation are required. We must either place the hospital within reach of all—an herculean task; or give obstetrical patients proper care in the home. A new type of obstetrician must be developed, the specialist in home obstetrics, able to recognize the type of case, and prepared to give the best of care to normal cases in the home, and to abnormal ones in the hospital. The careless "hit or miss," "trust to luck" obstetrician must fade into the past.

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DISCUSSION

John C. Irwin, M. D. (1006 Union Bank Building, Los Angeles)—In discussing this paper I am compelled to differ from the author in his statement that a large number of confinements should be conducted in the home. I do, however, agree with him in his plea for more efficient care of normal labors at home. It is, of course, impossible for all births to be cared for in hospitals because we have not enough institutions to care for them, but I believe the time will come when we shall have. Until that time arrives our chief aim should be for better care for the mothers who must be delivered at home.

It is true that the majority of babies are born in the home. Must we not then decide that this fact has something to do with the appalling death rate from childbirth in this country? We stand eighth or ninth of all civilized countries in this particular cause of death, a reputation hardly to be wished for.

It is estimated that at least twenty-five thousand women die annually in the United States from childbirth, a larger number of Americans than were killed in any battle of the World War. In 1916 United States Government statistics of about two-thirds of the population gave 11,642 deaths from childbirth, not including cases in which the child was stillborn. Of this number 5201, about half, were due to infection. We know that infection is preventable, and is almost unknown in hospitals except in patients brought to the hospital already infected. In two hospitals in Los Angeles, of which I know the statistics, no death from infection has occurred in the past five years. Deduction from these statistics warrants the statement,

then, that ten to twelve thousand women could be saved annually in the United States through hospital care during confinement.

Another fact well known is that more deaths occur from accidents of the third stage of labor than from the first and second combined. About half of these deaths are due to postpartum hemorrhage, and it is estimated that about 1100 to 1200 women die of it annually in the United States. This complication is one very difficult to cope with in the home because of lack of assistance and equipment, both of which one has sufficient of in a hospital. In the dispensary service of the University of Pittsburgh I had charge of 3300 deliveries in a period of three years. The only deaths we had during or immediately after delivery were three due to postpartum hemorrhage, and these were due to the physician being alone, and without sufficient equipment to handle the complication. All three deaths could have been prevented in a hospital, but death occurs too quickly for removal to a hospital, or even to secure assistance.

The author states that the mother is more contented at home surrounded by her family, and therefore will have a better recovery. In my opinion the family surrounding her with all its troubles and worries is just the thing from which the mother should be removed during her convalescence. The mother will return to normal more quickly and have a better milk supply for her baby if kept in bed where she can rest and be relieved of the responsibility of the household. Few patients can be kept in bed ten to twelve or more days at home. They will arise in spite of the physician's advice, a thing they cannot do in the hospital.

Finally the economic side of the question must be considered. Many hospitals and most of the small maternities offer a complete maternity service of ten to fourteen days for from $65 to $100. Comparable service cannot be given in the home for less when one takes into full account the expenditures necessary at home. Supplies for the labor cannot be secured for less than $10 to $15. A practical nurse for twelve days at $5 per day and food for the mother and nurse at not less than $1.50 per day for both added to the above equals what the hospital charges. Add to this an anesthetic fee and the possibility of having to go to the hospital per ambulance for some complication, and the financial argument is in favor of the hospital. This is, of course, for comparable services.

As stated before, we have insufficient hospitals to care for all confinements and a certain number must be conducted in the home. Certainly there should be some improvement in this class of service. I believe the solution is the specialization of one or two physicians in every small community in obstetrics, and all confinements be referred to them. They in turn avoid all infectious diseases and become expert in their special line. Elimination of midwives and irregular practitioners as attendants on obstetric cases and proper financial compensation of the expert will do much to solve the problem of home obstetrics until sufficient maternity hospitals can be built.

J. W. Farrell, M. D. (308 Westlake Professional Building, Los Angeles)—When the day arrives that all maternity is cared for by adequately trained obstetricians and each case given the thought, consideration and supervision that prevails in our better equipped present-day maternity wards there shall no longer be reason for discussion as to the relative merits of home versus hospital obstetrics. There should be no difference. Any man or woman who undertakes the care of the expectant mother should be born with an "obstetric conscience." I feel that this is the prime requirement for the making of a good obstetrician. Judgment, technique and niceties may be acquired by experience, training and hard work.

The point then resolves itself into, which taxes our conscience the greater: the home or the hospital? The balance is about equal. The lazy man, the man void of conscience, will sleepily hear of his patients' admission to the hospital and in turn instruct the nurses or interns on duty to call when the head is on the perineum. This man, not calling one whit on his conscience, disregards all the grave possible disasters that might befall his patient while he so blissfully forgets and neglects her, and relies on the judgment and conscience of a nurse or recent graduate to call him.

This same type of man in 90 per cent of cases more flagrantly neglects his patients prenatally, and soon forgets them after the cord is tied. But the same man dealing with cases in the home will cause more disaster and morbidity to his patients. Here he has to contend with an excited family as well as the patient. They will call him frequently and, as he will consider, needlessly. The anxiety of the family will instill in him an unconscious desire to quickly terminate the case. A faltering conscience and weary physique will quickly eventuate in the injudicious administration of pituitrin in premature attempts at operative delivery.

My long experience with the Los Angeles City Maternity Dispensary leads me to feel in accord with Doctor Fist that babies born in the home do meet with a better milk supply. But upon analysis I cannot but feel that it is the type of patient here encountered rather than the environment that is most conducive to the adequacy of milk supply that accounts for this apparent advantage.

In the hospital, nurses or interns can be trained to auscultate the fetal heart tones at necessary intervals. In the home a trained person should be present at all times, but such a person is hard to obtain.

When it comes to the actual delivery of the case all home technique should be absolutely intensive. No matter how much sterile equipment we bring to the home (and the smallest amount the better) we should consider and use as a working basis only a very limited field as being sterile, or clean is a better word to describe it. How feasible is it then that we should examine in the home each case for minor lacerations of the cervix? Yet this in the well-equipped maternity is a procedure unattended with risk or danger to the mother.

I agree that perineal lacerations in the home, when properly repaired, as a rule heal kindly. However, episiotomy in the home is not well accepted by the laity, and until they are so educated to accept it the home obstetrics shall suffer from want of a necessary procedure.

Doctor McNeile and I are vastly proud of our record on the maternity service in dealing entirely with home cases; but I feel that overshadowing our good statistical reports is the fact that this service has been instrumental in the training and stimulating of obstetric consciences in many young interns, who will continue to let this guide them in their obstetric practice whether in the home or hospital.

E. T. Rulison, M. D. (California State Life Building, Sacramento)—It would seem not only a difficult matter, but an inadvisable one to popularize a "Back to the Home Obstetrics" campaign. Hospitals in this country in the past few years have rapidly metamorphosed from their "boarding-house" status to their proper status of truly scientific institutions, and as such may and should be trusted and employed by our expectant mothers during that ever dangerous crisis of childbirth. While it is true that a majority of the babies still pass beneath the "Triumphant Arch" and find their first resting place on a pile of newspapers in the center of a sagging mattress while the obstetrical attendant stands with one knee on the bed to relieve his aching back, more and more women are each year demanding aseptic hospital service. The idea that childbirth is a surgical procedure has been spreading rapidly throughout the urban communities, and it will soon be exceptional to encounter women other than those of the emigrant class who will prefer to have their babies at home. Women are realizing that the hospital maternity service is safe and more economi-

cal, and that their lying-in period spent in the institution is a happier one. Women instinctively feel in a hospital with a well-organized service that they are in competent hands. With modern methods of amelioration of the agony of labor pains, with the possibility of excluding unwelcome and annoying visitors during the first week of the puerperium, with the crying or fretful baby happily out of hearing, with the food uniformly good and well selected, with the electric breast pump and other modern devices to meet the unpleasant complications that arise, what woman would choose the home with its inconveniences, its annoyances and dangers?

Would it not be better to continue our efforts in behalf of better maternity services in our present hospitals and the construction and endowment of more maternity hospitals throughout the country. This should be a matter of concern to our women in public life. The needless sacrifice of twenty-five thousand of our splendid American women yearly still goes on. It is an indictment of our profession that may best be met by hospitalization of all maternity cases. It is inconceivable that midwives and those physicians who are responsible for the high mortality in obstetrical cases can ever by any means be educated, exhorted or forced to change their slovenly, death-inviting methods.

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Doctor Fist (closing)—A well-conducted hospital is undoubtedly the best place for confinement. However, since delivery in the home, which has points in its favor as well as against it, is the method available to the greater number, it merits our consideration. With an annual mortality of about twenty thousand mothers and two million babies, it is high time that we attempt to improve home obstetrics.

We should not abandon or neglect the delivery room, but we must take care of home confinements. It is much easier to neglect the patient in the home where greater attention should be given to care from the time of conception to the end of the puerperium. Operative correction of diagnostic mistakes is not nearly so easily performed in the home.

Proper service must include: instructions to patient, prenatal care throughout pregnancy, and for at least six weeks postpartum if normal.

Doctor Farrell has spoken of the low out-patient mortality of the Los Angeles Maternity Dispensary, and of the interns trained there, under the direction of Doctor McNeile and himself. In my opinion this type of instruction is invaluable and should be prerequisite to the practice of obstetrics. Education of those who deliver the great number of patients is absolutely necessary. The Department of Health of the state of New York made a step in the right direction by inaugurating lecture courses in obstetrics for physicians in rural districts. The improvement in technique and decrease in mortality which would follow such lectures in all states would be well worth the expense and effort.

Doctor Irwin has well brought out the fact that many deaths are due to hemorrhage during the third stage of labor. Proper conduct of the earlier stages of labor would greatly decrease the number of these.

Careful prenatal supervision is indispensable. In the majority of cases rectal and abdominal palpation suffice to furnish all necessary information as to progress. Avoidance of invasion of the birth canal is fundamental. Heart sounds of mother and baby must be watched at frequent intervals. Proper scrubbing of hands and use of sterile linen, now so easily obtainable, eliminate much danger. Active supervision of the second stage should always be the rule. These things are all possible, but education of those engaged in home obstetrics must precede general improvement in that work.

Without decrying efficient hospital service for abnormal childbirths, a plea is again entered for more efficient care of normal births in the home.

TERATOMA OF THE TESTICLE—DIAGNOSIS AND TREATMENT

By Edward J. Kilfoy, M. D.
Los Angeles

Discussion *by Foster K. Collins, M. D., Los Angeles; Frank Hinman, M. D., San Francisco; A. A. Kutzmann, M. D., Los Angeles.*

WHEN a patient presents himself with enlargement of the testicle the clinician or surgeon is confronted with a difficult problem and must consider that its diagnosis entails as much study as a cross-word puzzle.

The clinical diagnosis of teratoma of the testicle is difficult, as the physical findings are almost identical with those of other testicular tumors. The clinical diagnosis is usually determined after exclusion of the following different conditions: carcinoma, sarcoma, hydrocele, gumma, tuberculosis, hematoma, spermatocele, acute epididymitis, varicocele, bubo, and torsion of the spermatic cord. The most frequent conditions that have to be eliminated are lues, hydrocele, and tuberculosis. Gumma of the testicle resembles a tumor more closely than any of the other conditions. One must not forget that generalized lues and malignancy of the testicle may be coexisting in the same individual. A positive blood reaction is no excuse for prolonged delay for antiluetic treatment, as it is the lesser of the two evils to remove the gumma surgically than to delay operation on a highly malignant testicular tumor for antiluetic treatments.

Some cases of hydrocele and hematocele present difficulties of differentiation by clinical means. In a hematocele the transillumination of light often fails, also the feeling of fluctuation on palpation. There are certain cases of teratoma that contain cartilage or mucoid material which may transilluminate light and give fluctuation on pressure and these must be ruled out. Hydrocele may be present and completely mask the presence of the teratoma, as it did in one case in this series. When the size of the hydrocele masks the diagnosis, aspiration of the hydrocele should be done, followed by palpation of any tumor, if present.

Tuberculosis rarely presents much difficulty in diagnosis, as it is usually coincident in some other part of the body. The only type of case that might present some difficulty would be a case of tuberculo-epididymo-orchitis, a very rare condition.

The symptoms are of a local and general character. The patient usually presents himself for examination complaining of a swollen testicle, a hernia, or fluid in the testicle. Several patients complained of backache, and they were innocent of any coexisting testicular enlargement. In the medical cases the patients complained of an abdominal growth and did not know there was either a tumor of the testicle or an undescended testicle on the side involved. The general symptoms are those of any active organic disease, such as weakness, malaise, loss of weight and strength, loss

* Read before the Southern California Medical Association, March 18, 1927.

(The clinical case records for this paper came from the files of the Mayo Clinic, Rochester, Minnesota.)

of appetite, constipation, headache, and a mild secondary anemia.

On physical examination the teratoma may vary in size from a normal testicle to that of a large grapefruit. The teratoma usually retains the shape of the normal testicle. Occasionally there are areas that are irregular in outline and fluctuate on pressure. These areas are areas of degeneration within the teratoma itself. Teratoma are usually hard, smooth and tender on light pressure; the overlying skin is never involved and is freely movable over the teratomatous mass.

The potential high degree of malignancy, and the simplicity of an exploratory examination under local or gas anesthesia demand that each and every case of testicular enlargement should be so examined under anesthesia and tissue submitted for microscopic study to a competent pathologist. Further procedure will then be carried out according to the nature of the tumor. If examination is made in this way, an accurate diagnosis and prognosis of all testicular tumors can be made. Not until this is a routine procedure will a correct diagnosis be made in many testicular tumors.

Prognosis of the clinical course of teratoma depends upon a correct diagnosis of every testicular enlargement. If the tumor be strictly teratoma and the operation is done very early, followed by x-ray or radium and sometimes by both, the prognosis will be much more favorable.

METASTASIS OF TERATOMA OF THE TESTES

There are several courses in which teratoma of the testicle may metastasize. The most frequent of these are by the prevertebral system of lymph nodes. The primary lymph node involvements are the lumbar on the aorta for the left, and on the vena cava for the right, between the bifurcation of these vessels. The first work done as regards the lymph drainage of the testicle was performed by Most in 1899. Since then additional work has been done by Cuneo,[2] and Jamieson [5] and Dodson. Most, in his work, found no barrier between the testicle and the thoracic duct except the lumbar nodes which are imperfect, and the drainage goes directly to the subclavian vein. This is the route followed usually in general metastasis. The lumbar nodes are usually involved early, long before the tumor becomes any definite size. Figures 1 and 2 show the lumbar lymphatic nodes involved by secondary metastasis.

The second route of metastasis is through the accompanying veins of the ductus deferens, and this accounts for the pulmonary metastasis and metastasis of the liver, brain, and occasionally the kidneys.

The third place of metastasis is to the inguinal lymph nodes, and this usually occurs in those cases where there is a generalized lymph adenopathy, and where there are other findings of generalized metastasis. This always occurs late in the course of the duration of the teratoma.

The time necessary for metastasis to occur is very variable. Large metastases have been found in cases of short duration and vice versa. Autopsy and surgery have confirmed that teratoma spread

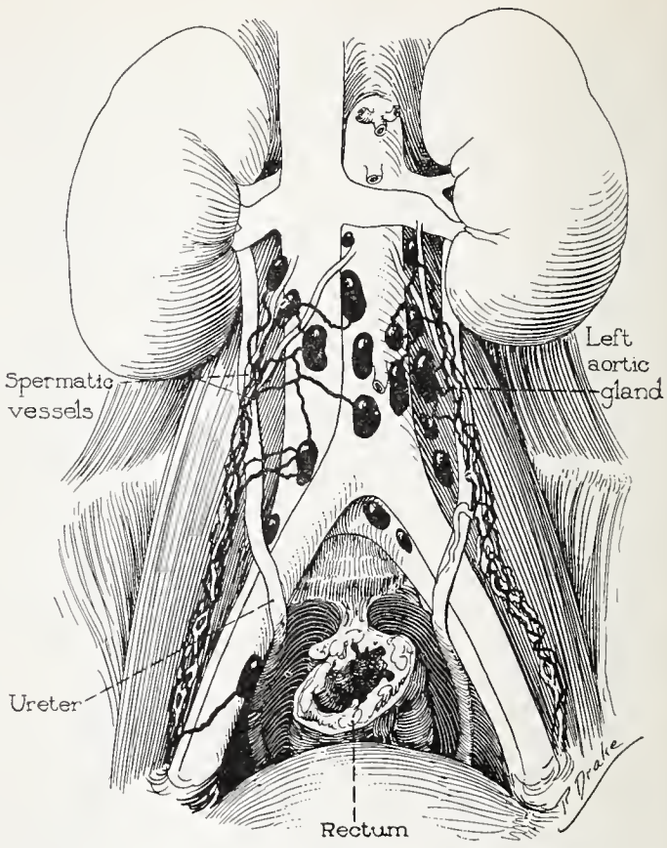

Figure 1—Shows the lumbar nodes involved by secondary metastasis.

more rapidly than unicellular tumors according to Chevassu. No doubt such lesions as teratoma and carcinoma have metastasized long before the primary growth is of a noticeable size. Therefore if surgical interference is to be done it should be employed as soon as possible. The size of the primary tumor has no ratio to the extent of the secondary metastasis. The secondary metastases are the lesions that always take life, as the vital organs are then involved.

On microscopic study, the secondary node may be identical with the primary, or may reproduce only one of several different features of the pri-

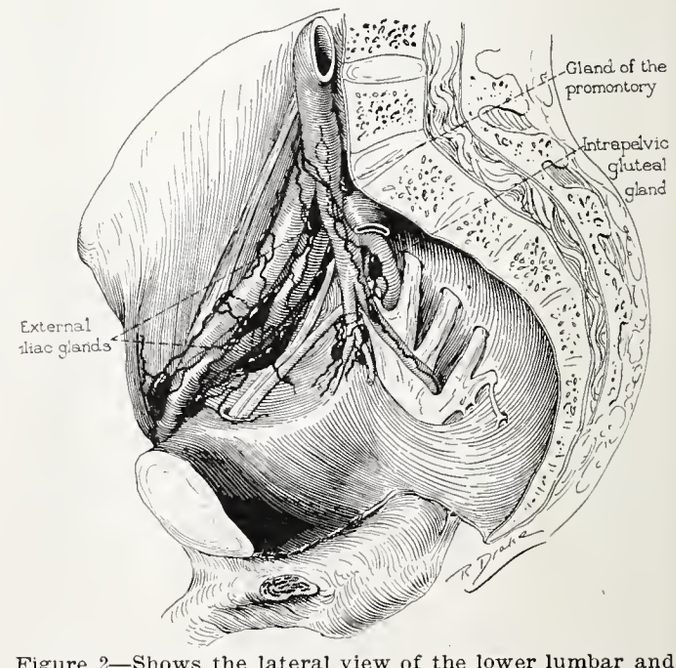

Figure 2—Shows the lateral view of the lower lumbar and sacral lymph nodes involved by secondary metastasis.

mary growth. The secondary nodes oftentimes may be as complex as the primary tumor itself. The secondary nodes in the mediastinum and cervical regions grow very rapidly and in a large percentage of the cases are the cause of death from mediastinal pressure on the heart and lungs causing cardiac and pulmonary embarrassment.

STUDY OF CASES

In this series of ten surgical cases of teratoma of the testicle, which were proven by microscopical study, the average age was found to be 29.5 years. The youngest patient was twenty-four and the oldest patient forty. Between ten and twenty there were no patients; twenty to thirty there were five patients; thirty to forty there were four patients. Between forty and fifty there was one patient. Beyond the fifth decade there were no patients. The average duration of symptoms was found to be 11.5 weeks. Of course the duration of symptoms cannot be exact, as many of the patients did not know the exact time the lesion began to grow.

Teratoma is always unilateral and occurs as frequently on one side of the testicle as the other. There was a history of injury in three cases. No doubt some of the others had had injuries, but of such slight nature that they did not mention it. Only one patient gave a definite history of neisserian infection. A positive blood Wassermann was not reported in a single case. The urine was negative and so was the blood count except for a mild secondary anemia in several of the advanced cases. All the patients except the first two, as reported in Table 1, had x-ray or radium or both.

There are five patients living and five patients dead. Of the patients living, the tumor was found by microscopic study to be teratoma; and in Case 3 the presence of carcinoma is questioned, as the patient is living and in good health. In Case 4, the pathological report showed adenocarcinoma of low-grade malignancy, and this was followed with x-ray and radium, and the patient was living on June 1, 1924. In the five patients that died, carcinoma was easily demonstrable, and they all died within a year after the time of the operation. Four of these patients had x-ray or radium, but the prognosis would have been the same no matter what procedure had been carried out. If carcinoma is coexisting in a teratoma the tumor is very highly malignant and the duration is short. If the tumor is a straight teratoma the prognosis is more hopeful, and the longevity may be indefinite as in Case 2, which patient is still living, eleven years after the operation. This shows that tissue from all testicular tumors in which secondary metastases are not demonstrable should be diagnosed by a competent pathologist. When carcinoma is coincident a more guarded prognosis can be made, and further x-ray or radium treatments can be carried out.

Table 2 represents a series of twelve medical cases; the exact diagnosis was not confirmed by the pathologist in this series of cases. Some of the cases were diagnosed as teratoma elsewhere. None of the patients in this group was operated upon. Seven of the patients had no known pathological diagnosis. In four of the patients the diagnosis was teratoma and in one the diagnosis was mixed tumor. There is no doubt that these patients also had areas of carcinoma, because at the time of examination large secondary metastases were found in the retroperitoneal, mediastinal, and cervical regions. Seven of the patients had had previous operations elsewhere and the other five had had no surgical procedure.

The average age was found to be 31.1 years,

TABLE 1—*Surgical Cases of Teratoma: Diagnosis Verified by the Pathologist*

Case	Age	Duration	Side	Injury or Metastasis	Operation	Pathologic Report	Treatment	Died	Living
1	26	6 weeks	Left	Injury at age of 11	Orchidectomy July 13, 1914	Teratoma and carcinoma	None	1-11-15	
2	30	4 months	Left	None	Orchidectomy and removal inguinal nodes March 7, 1913	Teratoma	None		March, 1924
3	24	9 weeks	Left	Injury, March, 1922	Castration and removal inguinal nodes May 8, 1922	Teratoma and carcinoma, cartilage, muscle, myxomatous tissue	Many x-rays		6-22-24
4	32	3 months	Right	None	Castration October 23, 1922	Teratoma and adenocarcinoma	X-ray and radium		6-1-24
5	33	7 weeks	Left	None	Castration May 2, 1918	Teratoma and carcinoma	None	6-24-18	
6	23	4 weeks	Left	Injury at age of 12 and 18	Orchidectomy March 3, 1917	Teratoma with hair and cartilage	X-ray and radium		7-1-24
7	29	3 months	Right	None	Orchidectomy Dec. 24, 1917	Teratoma and carcinoma	X-ray	8-31-18	
8	40	8 months	Right	Palpable inguinal nodes	Orchidectomy and removal inguinal nodes April 7, 1925	Teratoma and highly malignant carcinoma	X-ray	7-1-24	
9	34	3 months	Right	None	Orchidectomy Nov. 11, 1921	Teratoma and carcinoma	X-ray		1-26-25
10	24	2 months	Right	None	Orchidectomy Oct. 15, 1924	Teratoma and carcinoma	X ray and radium	4-25-25	
Average 29.5		11.5 weeks	5 cases right; 5 cases left	3 with history of injury				5 dead	5 living

TABLE 2—*Medical Cases of Teratoma*

Case	Age	Chief Complaint	Duration	Injury or Infection	Treatment	Pathologic Diagnosis	Clinical Diagnosis	Result
1	40	Soreness in the abdomen	2 years	Injury to left testicle 2 years previously	Removal of testicle elsewhere 3 years previously		Teratoma of testicle, mediastinal metastasis	Died May 20, 1924
2	21	Tumor of left testicle	3 months	No injury or infection	Orchidectomy in 1921 elsewhere. X-ray and radium	Mixed tumor	Teratoma of testicle with retroperitoneal involvement	Died January, 1925
3	55	Mass in right suprapubic area	2 months	No injury. Gonorrhea	None		Teratoma of undescended testicle	Not known
4	33	Backache	3 months	Gonorrhea. No injury	Right orchidectomy in 1917, elsewhere		Teratoma of testicle; metastatic nodes in neck and lungs	Died January, 1924
5	30	Lump in right abdomen. Left testicle absent	1 year	None	Castration elsewhere; X-ray		Teratoma of undescended testicle	Living in January, 1925
6	21	Swelling in right testicle	2 months	None	None		Teratoma of right testicle	Not known
7	45	Pain in back	6 months	Injury to right testicle 2 years previously	None		Teratoma of right testicle with metastasis to mediastinum, lungs, retroperitoneum	Died May, 1921
8	29	Backache. Mass in lower right quadrant	5 months	None	None. X-ray advised		Teratoma of the testicle, metastasis to lungs and mediastinum	Died Dec., 1919
9	41	Enlargement of left testicle	7 months	None	Castration in 1916. Coley's fluid. X-ray elsewhere	Teratoma	Teratoma of left testicle, metastasis to lungs	Died March, 1919
10	37	Pain in right inguinal region	3 months	None	Right castration March, 1917	Teratoma	Teratoma, with large cervical nodes, metastasis to lungs	Not known
11	39	Tumor in region of right kidney	1 year	None	Laparotomy, Feb., 1917, elsewhere	Teratoma	Teratoma of undescended testicle	Not known
12	32	Backache	2 years	None	None	Teratoma	Metastasis to retroperitoneal nodes	Not known

and the age of incidence was as follows: between ten and twenty, no cases; twenty to thirty, three cases; thirty to forty, five cases; forty to fifty, three cases; and beyond the fifth decade there was one case. Only two of the patients gave a history of injury and one gave a history of Neisserian infection. One patient had a diagnosis of a mixed tumor. Teratoma was diagnosed in four patients, and in seven the exact diagnosis was not known. Of this group, six of the patients are dead, and in five others it was not possible to obtain any data. There is one patient living in which a castration was done elsewhere, followed by many x-ray treatments. At the time of physical examination eight of the patients had demonstrable secondary metastases to the retroperitoneal, mediastinal, and cervical regions. The other four patients had diagnoses of teratoma in undescended testicle.

TREATMENT

The treatment in cases of teratoma is a problem that confronts one after the diagnosis is made. The size of the primary lesion is no indication of secondary retroperitoneal metastasis, and this must always be kept in mind. Oftentimes they are present and there is no demonstrable way to show that they are present. The operation as followed in this series of cases was castration, removal of the vas, and neighboring inguinal lymph nodes. The more radical operations as described by Hinman,[3,4] may be carried out with success with a fairly low surgical mortality. The advantage of the radical operation is that the lymph nodes that are primarily involved are removed.

In this series a simple operation was performed with no surgical mortality and the operation was followed by x-ray or radium and sometimes both, with fairly satisfactory results in cases in which carcinoma was found not to exist or of a low-grade malignancy if present. Some authors state that simple castration will cure from 10 to 20 per cent. Others state that simple castration is as good as "no operation at all." The surgical operation will depend upon the type of tumor and the grade of carcinoma if present. If high-grade carcinoma be present the prognosis is the same whatever operative procedure is carried out.

The x-ray and radium therapy are very valuable adjuncts in the treatment of this type of tumor, but are far from being curative, as reported by Barringer [1] and Dean after four years' follow-up treatments and repeated examinations. Some authors advise x-ray preoperatively, but this has not been tried in this series of cases. If the tumor is so large that it requires preoperative x-ray there is no need of surgical intervention. It has long been a known fact that the more embryonic in type the better the tumor responds to x-ray therapy. If this holds true, then in cases of true teratoma the x-ray is of great value, and is indicated in heavy and repeated doses, especially during the first year after the operation. After the first year all patients with or without metas-

tasis should receive some x-ray therapy as an additional safeguard.

Regardless of how careful one may be and of the surgical procedure employed, the prognosis must always be guarded and the patient kept under observation from time to time. If carcinoma is demonstrated by the pathologist the patient must be closely watched for mediastinal and cervical metastasis. This requires repeated check-up examinations and x-ray pictures of the thorax. Not until this is carried out will the patient be given the chance to which he is entitled to carry on against the disease.

CONCLUSIONS

1. Teratoma may occur at any age, but they are most likely to occur between the second and third decades, which is the age of sexual prime. The average was found to be twenty-nine and five-tenths years.

2. Teratoma of the testicle is potentially malignant to a high degree, and the size of the primary tumor is no criterion as regards the duration of the lesion, or the size of the secondary metastasis. If carcinoma is coexisting in a teratoma the prognosis is extremely bad. If the lesion is strictly teratoma the prognosis is much more favorable.

3. Because of the difficulty in making a correct clinical diagnosis, every questionable testicular tumor should be submitted to surgery and the tissue examined by a competent pathologist in order to make a correct diagnosis and a guarded prognosis.

4. Teratoma are much more frequent than stated in the literature, if the slide and gross specimen are thoroughly studied. The relative amount of blastodermic tissue varies greatly in different specimens.

5. The surgical treatment should consist at least of castration, including the vas and inguinal lymph nodes. The radical operation should be left to the choice of the surgeon. The surgical procedure should be followed up with x-ray or radium and sometimes both. X-ray and radium are very valuable adjuncts in the postoperative treatment.

6. After the patient has been dismissed he should be instructed as to what to look for, and to report every three months for the first year for a check-up examination. After this he should report every six months for the following five years for a check-up examination for metastases and x-ray therapy if indicated.

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DISCUSSION

Foster K. Collins, M. D. (412 West Sixth Street, Los Angeles)—This paper by Doctor Kilfoy is a distinct contribution to the literature on the subject of teratoma of the testicle.

About 1911 Ewing gave his well-known contribution on this subject. At that time he claimed that, after excluding gumma, tuberculosis, and hematoma, practically all true tumors of the testicle were malignant and, including carcinoma, had not been shown to exist apart from teratomatous origin.

Young, in the year 1926, stated that Ewing might be correct.

It is thought that all normal testes contain "sex cells" in the reta testes that are the potential cells of the origin of teratoma. These usually suppressed cells are ready to express themselves in teratomatous changes after they are stirred up by some infection or irritating process.

The practical thing, from the viewpoint of general surgery, is to remember that the early malignant teratoma, so far as the testicle is concerned, is confined within the tunica albuginea, and, because the tumor is therefore smooth and lacks irregular, hard characteristics, may be easily overlooked in its early stages.

Early metastasis is by the lymph nodes along the cord, pelvic and abdominal vessels. These nodes may be of large size, fairly early, while the testicle still shows none other than a smooth tumor confined within the tunica albuginea. To await testicular manifestations outside the tunica albuginea is to lose control of the situation.

As Doctor Kilfoy has said, the high degree of malignancy in testicular tumors is such that every case should be explored and the tissue submitted for microscopical study. Radical removal in positive cases, followed by radiation, is the proper course.

Because a hydrocele may coexist with teratoma it is a very practical point that in the treatment of all hydrocele the testicle should be carefully examined for tumor, otherwise since local enlargement is frequently the only early symptom, the patient may lose the only chance he has to recover from a malignancy.

A. A. Kutzmann, M. D. (1052 West Sixth Street, Los Angeles)—This excellent presentation by Doctor Kilfoy is timely since the diagnosis and treatment of testicular tumors, especially the latter, have always presented many problems. Our present knowledge of diagnosis, clinical course, prognosis and treatment of testicular tumors emphasizes that nearly all are malignant and that an accurate and early diagnosis is essential.

An analysis of the present theories concerning the pathology shows that there are but two types of testicular tumors, both of which are malignant—the teratoma or mixed tumor, and the seminoma or unicellular type of tumor. This could be further simplified if we accept Ewing's theory, that all tumors are of teratomatous origin, and that a unicellular tumor such as the seminoma be considered as an overdevelopment of one tissue in a tumor tridermal in constitution. Recently in conjunction with Doctors Hinman and Gibson additional evidence was offered to Ewing's theory when we were able to find in a single specimen, mixed tissues of various types growing abundantly with the typical seminomatous tissue. Pathologically the differences of these two types of growths can be seen in the gross and microscopic studies. The seminoma presents

grossly a uniform, solid picture and microscopically a solid medullary growth in which other types of tissue are rarely found. Other teratoma present grossly a characteristically complex cystic picture and histologically an equally complex picture in which can be seen various types of carcinomatous proliferation, cystic spaces lined by different types of epithelium, islands of squamous cells, cartilage, etc., all supported upon a more or less abundant connective tissue stroma.

The use of the phrases "carcinoma coexisting in teratoma," "adenocarcinoma," etc., by the author is apt to be confusing. It is well to remember that the teratoma is a tumor of tridermal origin; that in general the malignant elements in such mixed tumors of the testicle (teratoma) are almost uniformly epithelial in type and therefore carcinomatous in nature; that these carcinomatous elements in the teratoma are generally amenable to classification into one or more of three groups; (*a*) trophoblastic-chorio-epithelioma; (*b*) hypoblastic-adenomatous type; (*c*) epiblastic-solid alveoli of basal cell type and tumors of the neurocytoma group. Hence the term "teratoma testis" should be used inclusively and as such signify all these types of degeneration.

The treatment has resolved itself into three groups: (1) simple orchidectomy; (2) orchidectomy with a radical resection of the preaortic lymph nodes; (3) orchidectomy with radiation. Orchidectomy even with early diagnosis has been a failure, carrying with it an ultimate mortality of 85 per cent due to the metastatic processes of the disease. There is sufficient statistical evidence to prove the inadequacy of this procedure. Reports of 50 per cent cures, such as Handfield-Jones', are far too optimistic and do not represent the true statistics. Realization of the ineffectiveness of orchidectomy has stimulated surgeons to greater efforts and to bring forth the second and third methods of treatment. These are based upon a knowledge of the testicular lymph drainage which plays an important part in the metastasizing and rendering most treatment ineffective.

In a recent analysis of personal cases and cases from the literature, Hinman showed that the cures had been increased 100 per cent by means of the radical operation. Cases with metastases to the preaortic lymph glands were still living, some over four years with no sign of the disease, following radical removal. This operation is based on the principle that attack on a malignant tumor and its lymph drainage to be successful must be whole-hearted.

Radiotherapy as advocated by Barringer and Dean has produced some excellent results, especially in cases designated as "recurrent inoperable." This should not be surprising when it is recalled that the x-ray and radium have been found to exert a specific action on the spermatogenic cells, with no tendency to destroy other tissues. The slowly increasing number of case reports in the literature and the writer's experience have shown the seminoma type of testicular tumor to react the most favorably to this type of treatment. From observations, I believe that at present the most efficient treatment is the radical operation for the mixed type (teratoma) of tumor, with orchidectomy and deep therapy in the unicellular (seminoma) type.

❦

Frank Hinman, M. D. (384 Post Street, San Francisco)—Doctor Kilfoy has presented a very good outline of the diagnosis and treatment of tumors of the testicle. There is little to add in the way of discussion, particularly after having read Doctor Kutzmann's discussion inasmuch as my opinion conforms to his with respect to nomenclature and treatment particularly.

With respect to the routes of metastasis of malignant tumors of the testicle, it is quite apparent from what is said in the paper that the prevertebral lymph nodes are the primary and most important zones. As to the metastasis from inguinal lymph nodes, this does not occur unless the integuments covering the testicle are involved by invasion, which occurs only in very late stages of the disease. There is no object, therefore, in removing the neighboring inguinal lymph nodes at the time of an ordinary castration.

❦

Doctor Kilfoy (closing)—I wish to thank Drs. Collins, Kutzmann, and Hinman for their timely discussions of this paper.

The classification of testicular tumors varies considerably according to the author, and is badly in need of a standard classification. The operation to be performed should be left to the judgment of the surgeon and the clinical findings of the patient. I doubt if all the lumbar and sacral lymph nodes are removed in doing the radical operation, and if they are not all removed the primary purpose of the operation is defeated.

INTERESTING FACTS ABOUT THE HEART*

WITH AN ANALYSIS OF CASES

By Arthur E. Mark, M. D.

Los Angeles

Discussion *by Harry Spiro, M. D., San Francisco; James F. Churchill, M. D., San Diego; Donald Jackson Frick, M. D., Los Angeles.*

HEART disease has supplanted tuberculosis and cancer, and now leads in yearly fatalities. It is estimated that in this country 100,000 people die each year from organic heart disease.

Cohn [1] reports that approximately 2 per cent of the population of the United States are suffering from this affliction. These figures do not include the deaths from other diseases which frequently terminate in cardiac failure. For example, F. T. Billings [2] states that death in pneumonia is in the large majority of cases one of cardiac failure.

In practically all conditions which assume a critical state and especially in postoperative reactions, our greatest problem is to give adequate support to the heart.

CAUSATIVE FACTORS IN HEART DISEASE

The causes of heart disease are numerous and in many cases difficult to determine. Investigations into the various etiologic factors reveal many interesting facts and possibilities. Early in life rheumatic fever, tonsillitis, chorea, and other infectious diseases, are the principal factors causing carditis, while in later life arteriosclerosis, hypertension, nephritis, and syphilis, are the principle exciting causes.

In an analysis of 1001 cases of organic heart disease among adults, Wyckoff and Lingg [3] found that about one-fourth of the cases presented rheumatic heart disease; about two-fifths, arteriosclerotic; about one-tenth syphilitic; and about one-tenth, heart disease of unknown origin. Scarlet fever, hyperthyroidism, nephritis, etc., together contributed to less than one-tenth of the total. Many other interesting facts are given in their

* Read before the Southern California Medical Society, November 6, 1926.

paper. For example, they state that rheumatic fever was rare after 50 years of age, syphilitic heart disease was rare before 40 years of age, etc. In an analysis of a series of cases as the above, extreme difficulty arises in ascribing a single cause to many individual cases. That all-important factor, heredity, plays a major rôle in heart disease, as well as in arteriosclerosis, hypertension, and nephritis.

Environment is also of extreme importance. The American nation as a whole is living a life of extremes. We are more prone to overdo or underdo, the fine balance which is most productive of good health being struck by few. This applies especially to eating and to exercise. Overeating with the resultant obesity is one of the most prolific causes of cardiovascular renal disease. Improperly balanced diets, especially those containing excesses in protein, are marked sins of commission. Too little rather than too much exercise is the rule. There is, however, a certain danger in the latter especially after middle age. One of the most difficult lessons to learn is that we cannot do so much in later life as we did in our earlier years.

At this time I wish to emphasize the congenitally small heart. Many individuals possessing this are able to handle the ordinary exigencies of life, but absolutely incapable of responding to undue stress and strain without disastrous results.

The heart which has become hypertrophied as a result of exercise, the athletic heart, as it is commonly termed, is probably always accompanied by some dilatation. According to Pardee,[4] hypertrophy usually includes a certain degree of dilatation. Even though no dilatation is present it is hardly a normal heart. The tendency to let down on exercise and often to cease all activity over a number of years paves the way for degenerative changes in the hypertrophied heart. The tonsils have been considered as being very closely associated with rheumatic fever. The common association of rheumatic fever and tonsillitis has fostered this idea. Many patients, however, develop rheumatic fever without any antecedent tonsillitis.

Kaiser[5] showed from a comparison of a large series of children who had had tonsillectomies with children in whom the operation had not been performed that there is no decrease in the rheumatic syndrome or in cardiac disease. Hunt[6] and Hamberger[7] have also emphasized this.

It is quite logical to assume, however, that the tonsils are the original foci in many cases. Recurrences following their removal would indicate the presence of secondary foci or other primary foci, as the teeth, sinuses, prostate, etc.

In many cases constitutional tendency plays a part. Many families show a marked rheumatic tendency.

In a consideration of infectious diseases one cannot but believe that influenza and even repeated ordinary colds are a common cause of cardiac damage. The latter may be very slight and symptoms such as precordial distress, palpitation, dyspnea, and increased pulse rate, may disappear within a very short time. It is logical to assume that in many of these cases even though the symptoms absolutely subside, a certain degree of cardiac damage remains.

The frequent involvement of the aortic valve in infectious diseases, especially in rheumatic fever, has markedly changed our ideas regarding the constant etiology of syphilis. While syphilis is a common cause of aortic valve lesions, it plays a minor etiological rôle when the trouble appears in the young.

As already brought out by Wyckoff and Lingg,[8] syphilitic heart disease is rare before 40 years of age. This statement, however, is subject to some modification.

According to Tasker Howard,[9] there is a widespread distribution of the invading organism in patients with early syphilis. He further states that the few autopsies that have been performed at this stage of the disease show the offending organism in the heart and aorta.

Willius[10] has shown that a period of nineteen years elapses between the initial infection and the actual development of symptoms. This shows very definitely the insidious nature of syphilitic heart disease, and in this respect it is quite comparable to nervous system syphilis.

In exophthalmic goiter and thyrotoxic adenoma the degree of cardiac involvement is dependent upon the duration of the thyrotoxicosis, as well as upon its intensity. The thyrotoxicosis associated with thyrotoxic adenoma is prone to cause more cardiac damage than is the hyperthyroidism associated with exophthalmic goiter.

Murmurs due to exophthalmic goiter or thyrotoxic adenoma are systolic in time and usually loudest over the third interspace; but may be loudest over the apex, with a variable transmission. Both murmurs may be present.

Willius, Boothby, and Wilson,[11] report the above murmurs as occurring in 41 per cent of a series of exophthalmic goiter patients and in 51 per cent of a series of thyrotoxic adenoma patients. In only two instances in the group were the murmurs due to endocardial valvular disease. It is surprising how frequently these murmurs exist, and how often the actual nature is misinterpreted and these patients designated as true cardiopaths.

DIAGNOSTIC AIDS

Since the causes of heart disease are so numerous, and since a combination of factors often contributes to the cause, it is of extreme importance to utilize every diagnostic procedure. Additional methods for the determination of cardiac enlargement should supplement auscultatory examination.

The x-ray has aided materially in this, and a properly done orthocardiogram is by all means the most accurate method. The x-ray, however, should not entirely replace physical examination. The routine careful determination of the size of the heart by physical examination should always precede x-ray examination, the latter being used more as a check and an aid to develop accuracy. One repeatedly hears the statement made that it is impossible to determine the cardiac borders, especially the right, with any degree of accuracy. This is true in very occasional cases, but my expe-

TABLE 1—*Analysis of Cardiac Measurements (in Centimeters)*

Case	Base				Right				Left			
	Pal.	Per.	Aus. Per.	X-ray	Pal.	Per.	Aus. Per.	X-ray	Pal.	Per.	Aus. Per.	X-ray
1	5	4.6	4.6	5.1	3.8	3.9	3.8	4.7	10	10.2	10.4	10.7
2	5.5	5.6	5.6	6.5	4	4.2	4.3	5.2	11.5	11.8	11.5	12.8
3	5.2	4.8	5	4.5	4	4.2	4.4	5.8	10	9.8	9.8	8.8
4	3.5	3.4	3.5	3.6	3.5	3.6	3.4	4	8	8.1	8.2	8.3
5	4	4	4.2	3.8	3	3.2	3	3.2	9	9.2	9	9.6
6	4.2	4.2	4.4	4	5.2	5.4	5.2	5.7	9.2	9.4	9.4	9.2
7	6.5	6.8	7	7.6	5.5	5.6	5.5	7	12.5	12.5	12	10.5
8	6	6.2	6.2	6	4.8	5	5	4.2	12	12.2	12	11.9
9	5.5	5.8	5.5	5.9	5.2	5.5	5.2	5.7	11.3	12	11.5	13.8
10	5.5	6.5	6.8	8.1	7	7.2	7	6	13.5	13.6	13.5	13.8
11	6	6.2	6	5.9	4.4	4.2	4.2	5.4	9.5	9.6	9.5	9.8
12	5.6	5.4	6	6	5.5	7	6.5	6	12.5	12.4	12.5	13
13	4.3	4.4	4	4.2	4.5	4	4.5	3.8	10.4	10.5	10.5	9.4
14	5	5	5	5.5	5.5	5.4	5	4.4	10	9.8	10	9.3
15	5.5	5	5.5	4.3	6	6.5	7	4.5	11	11.5	12	11
16	6.5	6.5	6.5	6.1	6.5	6	6.5	6.9	9.8	9.5	9.8	9.4
17	9	9	9	8.9	6.5	6.5	6.5	6.5	9	9.3	9	8.1
18	6.8	7	7	7.1	5.5	6	5.5	5.5	12	12.5	12	12.3
19	6	6	6	5	6	5	6.5	6.4	10	9.5	10.5	9.3
20	5.5	5.5	5.5	4.7	4.6	5	5	4.8	10	10	10	8.4
21	6	5.5	5.5	6	6.5	6	6.5	6.6	12.5	12.5	12.5	10.8
22	10	9	9	5.5	8	8.5	8	6.8	14	14.5	14.5	12.3
23	7	7	7	5.2	6	7	6	5.4	13.5	14	14	14.1
24	4	4	4	3.7	4.5	5	5	5.1	8	8.5	8	7.8
25	7.4	7	7.2	7	7	7.2	7.4	8.2	11	11.2	11	10.8

rience has been that in most cases the heart outline may be accurately determined. Repeated individual demonstrations have convinced me of this. In a study of fifty consecutive cases measurements obtained by palpation, percussion, and auscultatory percussion, have compared fairly with those obtained by x-ray study, as the table shows.

Palpation to determine the cardiac borders has in my hands become as accurate as percussion. My method is to use very light palpation for the left border, to start in the axilla and palpate medially, and for the right border to start, at least, 10 to 12 centimeters out and work medially. Reliance is placed on the difference in resistance of the underlying tissues. I have found this to be extremely valuable in general chest work, as well as heart work.

It is my practice to palpate, then percuss, and finally to use auscultatory percussion, taking separate measurements, avoiding the suggestive influence which one measurement affords by keeping the eyes closed or turned away on making the subsequent examination. Inspection for the apex beat and finally palpation for the apex beat is then carried out.

The use of the tuning fork, I have found of doubtful value.

The measurements correspond fairly well, as the table shows, and for the most part a difference of more than a centimeter was rarely encountered.

PROGNOSIS

To render an intelligent prognosis in heart disease, one must of necessity make an accurate diagnosis. Etiological factors must be considered, as well as heredity, environment, occupation, age, sex, etc. Accompanying pathologic changes, for example, a cardiovascular-renal syndrome of necessity is of much more serious import than a similar cardiac lesion alone.

The time of recognition of the trouble and the nature of treatment have a marked bearing on

TABLE 2—*Showing Number of Cardiac Cases in Each Group*

	.2			.5 and below			.1 and below			1.5 and below			.2 and below			2.5			3			3.5			4.5		
	B.	R.	L.	B.	R.	L.	B.	R.	L.	B.	R.	L.	B.	R.	L.	B.	R.	L.	B.	R.	L.	B.	R.	L.	B.	R.	L.
Pal.	15	13	10	12	13	14	11	11	9	6	9	1	3	2	7			3	2	1					1		
Per.	14	13	17	13	12	10	13	11	8	3	8	5	5	4	7			2	1	1		1					
Aus. Per.	16	13	14	15	12	11	10	14	9	6	8	10	2		2		1	4	1	1		1					

prognosis. A notable example of this is in cardiac syphilis.

The individual with heart disease is, naturally, concerned as to how this will affect his life. While the presence of any cardiac abnormality acts as a constant hazard it is frequently compatible with longevity. A simple mitral insufficiency is a striking example.

Observation of many patients by both clinical and special study, notably electrocardiographic study, has brought out the serious nature of certain cardiac conditions and physical findings. Of patients with chronic endocarditis, those having mitral stenosis or aortic insufficiency, give a poor prognosis.

Acute bacterial endocarditis is invariably fatal within a few weeks, while subacute bacterial endocarditis is fatal within from three to twelve months.

A very high mortality occurs in patients with coronary disease and also in conditions involving the arterial system. Sudden cardiac deaths are frequently due to coronary thrombosis and at times to cardiac rupture.

Krumbhaar and Crowell [12] state that spontaneous rupture of the heart is chiefly an accident to the left ventricle of the aged. In the aged spontaneous rupture is practically always due to coronary thrombosis.

Much emphasis has always been attached to the condition of the myocardium, and rightly so, as the ability of the heart to function properly is governed by the myocardial reserve. Cardiac enlargement is the most accurate sign of myocardial involvement. Where the right border of the heart extends beyond 5 centimeters to the right or beyond 14 centimeters to the left of the midsternal line and is not due to displacement, and not of a recent origin, life expectancy beyond a few years is very unusual even though no other cardiac abnormalities be present.

Recurring evidence of decompensation also augurs for a serious outcome. Heart sounds which are distant and lack definition, as well as gallop rhythm, are associated with a marked degree of myocardial fatigue. Pulsus alterans is usually followed by death. White [13] reports that nearly 100 per cent of his cases die within three years.

Auricular fibrillation is accompanied by a high mortality. Willius [14] reports a mortality of 41 per cent at an average of fifteen months after examination in a group of 500 cases. Other serious cardiac conditions are auricular flutter, heart block, and frequently, paroxymal tachycardia.

The electrocardiogram has been of inestimable value from a prognostic, as well as a diagnostic standpoint. Its great value is when it definitely shows abnormalities. The presence of a normal tracing very frequently does not exclude cardiac disease.

From a prognostic standpoint, of major importance is T-wave negativity in certain derivations and aberrations of the Q. R. S. complexes, affecting all derivations.

Most of our success in the treatment of heart disease is dependent upon a proper interpretation of what has already been said. Etiological factors are of prime importance. The ideal always to be sought is prevention. This is, however, very frequently impossible. The disease once established is most effectively treated in its early stages. This is also frequently impossible.

EARLY PRESENTATION

A few words might be said regarding prevention. Periodic physical examinations cannot be emphasized too strongly. Investigations should be made into predisposition; evidence sought for associated disturbances such as nephritis, and hypertension; intensive and prolonged treatment given when the etiologic factor is syphilis; and all foci of infection regularly eliminated. Overexercise, especially after middle age, carries a danger probably greater than underexercise. Excesses of overeating, or of mental stress and strain, which in themselves are probably productive of a toxemia, should all be avoided.

More prolonged absolute rest during and following acute illnesses is of vital importance even though no evidence of cardiac pathology be present.

Such seemingly trivial details as proper elimination and free fluid intake all contribute toward establishing a state of normality. Once established cardiac disease can often be cured providing a sufficient period of rest be instituted at the time of its onset. Any patient just developing cardiac disease, especially from an infectious disease such as rheumatic fever should, besides other measures, immediately be given the benefit of prolonged absolute rest in bed. Cases of long standing should be treated along similar lines. The smallest foci of infection should be eliminated, vaccines obtained from these foci should be administered in selected cases. Avoidance of excesses applies to an even greater extent. Absolute rest of from two to eight weeks twice a year, and oftener if indicated, should be enjoined before rather than after decompensation. A graduated regimen of return to normal activity should be followed. At least two to three weeks should be spent in the process, adding slightly to the gain of the proceeding until the patient has progressed from sitting up to walking.

THERAPY

The indication or contraindication for digitalis should be determined. Overdigitalization is productive of definite harm in many cases. Patients having heart block should not be given digitalis. Such symptoms as nausea and vomiting, coupling of the rhythm, decrease in pulse rate to 60 or below, call for a discontinuance of digitalis therapy for the time being. Generally speaking, too much reliance is placed on small doses of digitalis. Ten minim doses are inadequate for acute cases.

Strychnin and camphor are of questionable value. As an emergency stimulant oxygen is invaluable. Whisky has also a definite place in this

class of cases. Quinidin sulphate is of value in some cases of fibrillation, although productive of harm at times.

CONCLUSION

In conclusion I wish to re-emphasize the importance of thoroughness in our study of heart disease. All methods of examination should be encouraged. Laboratory and x-ray examinations are of great diagnostic aid when combined with our own examination. A comparison of heart measurements by palpation, percussion, and auscultatory percussion with x-ray examination of the heart shows these methods to be practically as accurate as x-ray. In view of this we should not discard clinical methods, but instead develop them to an even greater extent, combining the results with the results obtained by x-ray and laboratory, and thus establish a more reliable diagnosis on which to base subsequent treatment.

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DISCUSSION

Harry Spiro, M. D. (870 Market Street, San Francisco)—While one is listening to Doctor Mark's talk on "Interesting Phases of Cardiology," one cannot help but be struck with the interesting fact of how vast is our lack of knowledge on the subject of cardiology, how great is our inability to prognosticate with any degree of precision, and yet above all, what a wonderful organ the heart is, of how nature, when it formed the heart, tried to prepare for every possible emergency, and yet with all the wonderful reserve power of the heart, on what a very slender thread hangs life and death.

When we see or determine that the heart is enlarged we should be very careful before we make a diagnosis of a dilatation of the heart. We believe there is a vast difference between that heart which is hypertrophied, that is, in which the muscle is increased in amount, and the chambers also enlarged, and that condition of enlargement of the heart due to an overstretching—a thinning of the heart muscle and therefore an enlargement of the chambers. As a rule the heart stretches and contracts thoroughly, thus maintaining an efficient circulation. If it is not emptying itself thoroughly because the muscle is overstretched, and one uses the term "dilatation" for that condition, "dilatation" then means just what its name implies, viz., a dilated heart. I believe we have a means of determining whether the heart is emptying itself properly or not even though it is increased in size, and that means is the judging of the amplitude of the heart's visible pulsatory waves during the fluoroscopic examination. If we see a very, very small wave and a large heart, we believe that this heart is dilated and not emptying itself thoroughly. This is of extreme importance, particularly in cases of auricular fibrillation.

Volumes could be written on the subject of the thyroid heart and still leave a great deal to be said. As Doctor Mark has stated, a systolic murmur is an extraordinarily frequent finding in patients who have a toxic goiter. When one listens to a heart of this type he will find practically every characteristic which one would expect to find in a patient who has a mitral valve defect. In our experience, from an ordinary physical examination it is practically impossible to separate that heart which has a mitral valve defect and thyroid disease, and the heart which has a systolic murmur without a mitral valve defect and thyroid disease. In a case of this sort an x-ray examination of the heart, if properly done, is of extreme importance. If you examine your patient in the left anterior oblique position fluoroscopically, or have pictures taken in this position, you can determine if the left auricle is enlarged or not. If the left auricle is enlarged that patient has a mitral valve defect. If the left auricle is not enlarged that patient has no mitral valve defect. This is irrespective of the murmurs which you hear, so that you have a means other than a post-mortem examination by which you can with a great degree of accuracy determine the nature of the abnormal sounds which you hear over the heart in thyroid cases. These thyroid toxicosis cases in which the auricles are fibrillating do remarkably well on quinidin, particularly so if the thyroid gland has been removed, the patient kept at rest after the operation and then placed upon properly regulated doses of quinidin. How the heart will regulate itself permanently is astonishing.

I look forward to reading and to listening to more on the subject of cardiology by Doctor Mark.

James F. Churchill, M. D. (704 Electric Building, San Diego)—To my mind the most interesting work in internal medicine is the intensive study of patients with cardiac defects and the direction of such patients over a considerable period. The problem of the cardiopath is a broad one, including infection, rest, exercise, diet, elimination, occupation, finances, peace of mind and medication. The thought and attention given these cases is frequently rewarded by results which, if not brilliant, are well worth the effort.

In the usual heart case the goal is not to "cure" but rather to so direct the patient that he can live most comfortably and usefully with his defect. I find it is best to explain frankly to these patients why they are given certain directions and restrictions instead of having them blindly following orders. Intelligent cooperation on the part of the patient is of greatest importance in heart disease.

I am interested in Doctor Mark's table comparing the means of determining the heart borders, especially since it so closely tallies with my own experience. Practically I find it necessary to resort to x-ray assistance only in those individuals with thick chests heavily overlaid with fat. This applies especially to women with very large breasts. Ordinarily if one is painstaking he will not be far wrong on percussion.

Another point which cannot be emphasized too much is the value of prolonged rest in cardiac infections. It is often difficult to continue this as long as

may seem desirable, but here again frank discussion of the reasons will remove many of the objections of the patient or the family. In children especially the degree of restoration of the heart integrity by prolonged rest is truly remarkable, and it is often possible to transform what is apparently a seriously handicapped heart invalid into an active, useful individual.

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Donald Jackson Frick, M. D. (1136 West Sixth Street, Los Angeles)—It is to be hoped that the newly awakened interest in heart disease will lead to an approximation of the success reached in the handling of tuberculosis as a public health problem. The difficulty, as Doctor Mark has shown lies principally in the fact that in heart disease the etiological factors are multifold while in tuberculosis we have a definite causative organism. Abscessed teeth, as a source of infection, should be included in a discussion of etiology.

It is always difficult to review a problem as extensive as Doctor Mark's without becoming dogmatic. For instance, the statement that all hypertrophied hearts are also dilated is difficult to accept without qualifications.

One cannot help but agree heartily with Doctor Mark that the x-ray is a most valuable adjunct in cardiac study, and must feel that no case is carefully or completely studied until an orthodiagram has been made. It gives much information which cannot otherwise be gained, and in doubtful cases often fixes a diagnosis. It is not only in cardiac area alone but in study of so-called heart tone, in delineation of the heart outline, and investigation of the encroachment upon the posterior mediastinal space and changes in the aorta, that we find the fluoroscopic study of the heart of the greatest assistance. The addition of a new method of study does not of necessity replace the older methods, but should widen our conception of the conditions under investigation.

Our hope for the future undoubtedly lies in prevention of those conditions which result in heart damage. In treatment of persons already presenting heart involvement, we must rely principally on rest and re-education.

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Author (closing)—It is a debatable point whether or not a certain degree of dilatation always accompanies cardiac hypertrophy.

X-ray and fluoroscopic examination of the heart are of inestimable value and should whenever possible supplement the physical examination. I am very pleased to note that this has been emphasized by Doctors Frick and Spiro. Personally I have been very hesitant about making a diagnosis of valvular defects on the basis of fluoroscopic studies. I cannot agree with Doctor Spiro regarding the difficulty of differentiating between the systolic murmur associated with exophthalmic goiter and that due to mitral insufficiency. The systolic murmur accompanying hyperthyroidism usually has its maximum intensity in the pulmonic area and is then easily differentiated from the systolic murmur of mitral insufficiency, which is of maximum intensity at the apex and with definite transmission to the axilla.

As brought out by Doctor Churchill, one experiences greater difficulty in determining the heart borders in the stout man and in women with large breasts. However, by the combined use of palpation, percussion, and auscultatory percussion, and when possible, x-ray, the margin of error is cut to a minimum.

I am very pleased that all the discussers have laid particular emphasis on prolonged rest, which is in absolute accord with my views as brought out in my paper.

THE LURE OF MEDICAL HISTORY*

JOHN HUNTER

With His Own Graphic Account of His Attack of Coronary Occlusion in 1773

On the Second Centenary of His Birth

By Frederick Leet Reichert, M. D.
San Francisco

IN the history of medicine the figure of John Hunter, younger brother of William Hunter, dominates the eighteenth century. He may in reality be acclaimed as the father of scientific surgery, since he initiated those developments in surgery which led in the two centuries just past to the gradual replacement of empiricism by the application of anatomical, physiological and pathological knowledge. His fame lifted him well above the ranks of his profession, and he was regarded by Billroth, that master genius of German surgery, as one of the greatest men the English nation has produced. His birth is recorded in the parish register of Kilbride, near Glasgow, as of February 13, 1728, just two hundred years ago, and he died in London in 1793.

MAJOR ACHIEVEMENTS OF JOHN HUNTER

We pay tribute to John Hunter daily in our recognition of his great contributions to medical science. Among them are his accurate descriptions of the natural history and diseases of the teeth, the exact mode of the descent of the testis, the cause of inflammation in veins, the introduction of the stomach tube as a means of administering food and medicine, the Hunterian operation for the cure of aneurysm, the efficiency of mercury in the treatment of syphilis, the circulation of the placenta studied in collaboration with his brother William, a treatment for ruptured tendons, the mode of growth of bones, the treatment of gunshot wounds, and finally, as the greatest contribution of all, his museum, now in the Royal College of Surgeons, London.

JOHN AND WILLIAM HUNTER

At the age of twenty John Hunter came to the school of his brother William in London as a voluntary helper, and within a year became an assistant in this famous group of anatomists. Here he readily learned the fundamentals of anatomical investigation from his brother, and he soon began independent researches in comparative anatomy. "He saw the meaning of science more clearly than any man who had lived, and he had the genius to make others see that meaning."

This paper is not concerned with the unfortunate controversy that separated these brothers, nor with the younger man's impetuous and petty quarrels. A tribute is due his tireless energy in revealing the truths that awaited him in the animal and vegetable world, not only in anatomy and physiology, but also in the new field of pathology. He was an alert and inspiring teacher, a master mind, reflected in such illustrious pupils as Edward Jenner, Sir Astley Cooper, John Abernethy, William Clift, James Parkinson, Sir William Blizard, Sir Evarard Home, Edward Alanson, Wright Post of New York, and Phillip

* From the Department of Surgery, Stanford University Medical School.

Syng Physick of Philadelphia, the last named the father of surgery in America.

SPECIAL STUDIES BY JOHN HUNTER

His strenuous life of over sixty years contained many interesting events, such as the experimental inoculation of himself with gonorrhea and syphilis to afford an accurate study of the course of the disease and the effects of treatment.

During the study of heat in animals he had hopes at one time of indefinitely prolonging life by means of human hibernation. He speculated thus: "If a man would give up the last ten years of his life to this alternate oblivion and action, I might prolong it for a thousand years by thawing him every hundredth anniversary, when he might learn what had happened during his frozen condition, being thawed to precisely the same condition at which I froze him."

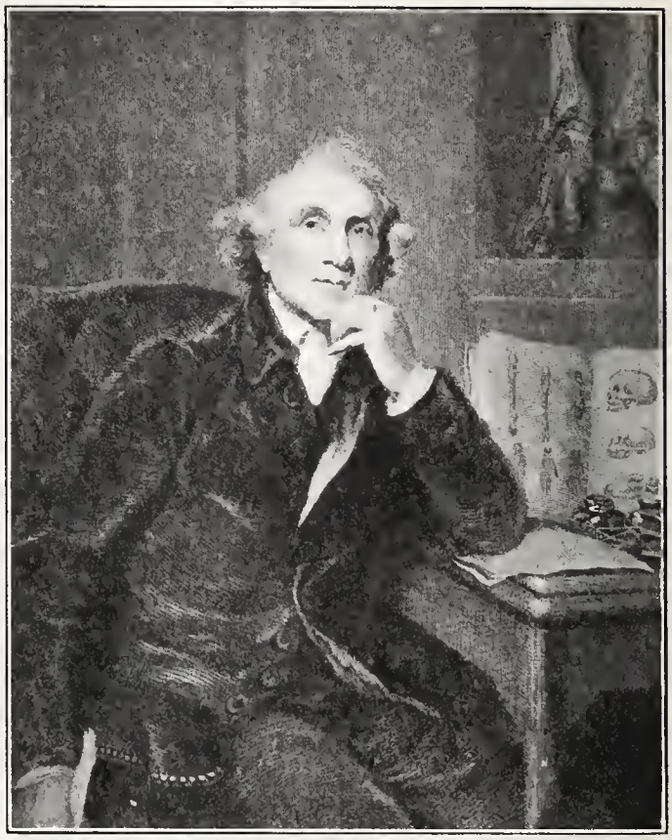
In his successful treatment of aneurysm, he applied the observations which he obtained after ligating the carotid artery of a deer in Richmond Park. In the first few days the antler seemed to wither, but after a week he found it warm and viable. When he dissected the head of the animal he discovered that anastomotic vessels furnished sufficient blood supply to keep the antler alive. Thus by experimentation came the principle that when the main artery to a part is ligated, collateral vessels by anastomosis provide adequate nourishment. Within a few months he applied this theory in the successful cure of a popliteal aneurysm.

In his eagerness to secure the skeleton of the Irish giant, O'Brien, who was seven feet seven inches tall, he was forced to pay five hundred pounds to the undertaker and his hirelings before they would release the body. The lower extremities of this famous skeleton are illustrated in the painting of Hunter by Sir Joshua Reynolds.

JOHN HUNTER'S STUDY OF CORONARY OCCLUSION

Today, because of our more exact knowledge of coronary occlusion, we find of more than passing interest the account of Hunter's illness, which covered the last twenty years of his life. Some of the symptoms he himself recorded, others were dictated to his brother-in-law and associate, Sir Evarard Home. We now recognize that instead of having repeated attacks of angina pectoris, as his pupil Jenner suspected, he suffered from coronary occlusion, as well as angina pectoris and cerebral arteriosclerosis. Heberden, a contemporary of Hunter, in 1768 first used the expression "angina pectoris," although Morgagni in 1743 observed the ossification of the coronary arteries which he correlated with the patient's symptoms.

Hunter's classical and graphic description of an attack of coronary occlusion which assailed him in the spring of 1773 deserves to be quoted in full. Sir Evarard Home records it as follows: "Having met with something which very forcibly affected his mind, he was attacked at 10 o'clock in the forenoon with a pain in the stomach, about the pylorus; it was the sensation peculiar to those parts, and became so violent that he tried change of position to procure ease; he sat down, then walked, laid himself down on the carpet, then



JOHN HUNTER

upon chairs, but could find no relief. He took a spoonful of tincture of rhubarb with thirty drops of laudanum, without the slightest benefit. While he was walking about the room, he cast his eyes on the looking-glass, and observed his countenance to be pale, his lips white, giving the appearance of a dead man; this alarmed him, and led him to feel for his pulse; but he found none in either arm. Several physicians of his acquaintance were then sent for: Dr. William Hunter, Sir George Baker, Dr. Huch Saunders, and Sir William Fordyce. All came, but could find no pulse; the pain still continued, and he found himself at times not breathing. Being afraid of death soon taking place if he did not breathe, he produced the voluntary act of breathing, by working his lungs by the power of the will; the sensitive principle, with all its effects on the machine not being in the least affected by the complaint. In this state he continued for three-quarters of an hour, in which time frequent attempts were made to feel the pulse, but in vain; however, at last, the pain lessened, and the pulse returned, although at first but faintly, and the involuntary breathing began to take place. While in this state, he took Madeira, brandy, ginger, etc., but did not believe them of any service, as the return of health was very gradual; in two hours he was perfectly recovered."

The next illness of importance came about three years later, and appears to have been an "inflammation in the arteries of the brain," accompanied by the feeling of being suspended in the air, and by the sensation that the room was going around. On its subsidence he vomited and felt relieved. These symptoms recurred the following day with the sensations of sight, hearing, smell, and taste extremely acute or heightened. "His pulse was generally about sixty, and weak, and a small degree of heat on the skin, especially on the hands

and feet. He remained in this state about ten days." The ataxia persisted during the convalescent period.

In 1785 an attack of gout ushered in the third serious illness and was followed by "a sensation of the muscles of the nose being in action, attended with an unpleasant sensation in the left side of the face, lower jaw, throat, . . . and down the left arm as low as the ball of the thumb. . . . After these had continued for a fortnight, they extended to the sternum . . . , giving the feel of the sternum being drawn backwards toward the spine, as well as that of oppression in breathing; . . . at these times the heart seemed to miss a stroke; and upon feeling the pulse the artery was very much contracted, often hardly to be felt. . . . He was next seized with a pain in the region of the heart itself; and last of all, with a sensation in the left side, nearly in the seat of the great end of the stomach, attended with considerable eructations of wind from the viscus." Several weeks later the most violent attack came which quite exhausted him and he sank into a swoon or doze to awake with confusion in his head which went off in a few days.

In December, 1789, he suffered a total loss of memory with complete recovery within a half hour. This was followed in two weeks by giddiness and ataxia. "Objects had lost their true direction; a perpendicular, for instance, seemed to lean to the left—and objects were also smaller than the natural recollection of them—and appeared to be at an unusual distance. . . . His recovery from this indisposition was less perfect than from any of the others; he never lost entirely the oblique vision; his memory was, in some respects, evidently impaired, and the spasms became more constant; he never went to bed without their being brought on by the act of undressing himself . . . .The least exertion in conversation after dinner was attended by them."

An attack in October, 1792, was so violent that Home thought he would not live. The final attack which caused his instant death occurred at St. George's Hospital on October 16, 1793, when Hunter, angered at a meeting, restrained his feeling and left the room to drop over dead.

AUTOPSY FINDINGS

The postmortem was made by Evarard Home, who states that the gastro-intestinal tract was normal and that the gall bladder contained five or six yellow stones. The right lung was clear, but there were strong adhesions to the pleura of the left lung. The pericardium was unusually thickened, but no abnormal fluid was present.

"The heart itself was very small, appearing too little for the cavity in which it lay, and did not give the idea of its being the effect of an unusual degree of contraction, but more of its having shrunk in its size. Upon the under surface of the left auricle and ventricle, there were two spaces, nearly an inch and a half square, which were of a white color, with an opaque appearance, and entirely distinct from the general surface of the heart; these two spaces were covered by an exudation of coagulating lymph, which at some former period had been the result of inflammation there. The muscular structure of the heart was paler and looser in its texture than the other muscles of the body. . . . The coronary arteries had their branches which ramify through the substance of the heart in the state of bony tubes, which were with difficulty divided by the knife, and their transverse sections did not collapse, but remained open. The valvulae mitrals, where they come off from the lower edge of the auricle, were in many places ossified. . . . The semilunar valves of the aorta had lost their natural pliancy, the previous stage to becoming bone. . . .

"The aorta, immediately beyond the semilunar valves, had its cavity larger than usual, putting on the appearance of an incipient aneurysm; this unusual dilatation extended for some way along the ascending aorta, but did not reach so far as the common trunk of the axillary and carotid artery. The increase of capacity of the artery might be about one-third of its natural area; and the internal membrane of this part had lost entirely the natural polish, and was studded over with opaque white spots, raised higher than the general surface. . . .

"The internal structure of the brain was very carefully examined, and the different parts both of the cerebrum and cerebellum were found in the most natural and healthy state; but the internal carotid arteries, as they pass by the sides of the sella tursica, were ossified, and several of the ramifications which go off from them had become opaque and unhealthy in their appearance. The vertebral arteries lying upon the medulla oblongata had also become bony, and the basillary artery, which is formed by them, had opaque white spots very generally along its coats."

ADAMS' DEDUCTIONS

Joseph Adams, in his memoirs of John Hunter, published in 1817, was apparently the first to compare the morbid appearances in the various organs with the symptoms during life. He rightly felt that the opaque spots on the heart probably resulted from the severe illness of 1773, believing "that the heart refused to act, the invariably immediate consequence of high inflammation in a muscle," which today we would interpret as due to coronary occlusion.

The symptoms of 1776 Adams states are readily explained by the appearance within the cavity of the cranium where "the arteries of the brain suffered high inflammation."

During the severe paroxysms of 1785 he felt that "probably calculous deposition took place in the aorta. . . ."

"The symptoms of 1789 were probably the effect of a slighter degree of inflammation about the substance of the brain, or of some irregularity in its supply of blood from the condition of the arteries. . . ."

We must remember that Adams' deductions were made many decades before the functions of the brain had been localized.

John Hunter's remains were interred in the parish church of St. Martins in the Fields and some fifty years later were removed to Westminster Abbey.

"Hunter was a profound philosopher, a great naturalist, a pre-eminent collector, and a foremost surgeon of his time. It was to make surgery more perfect that all his works subserve, and in it to reach the highest rank. He rendered to this art of science greater service than had been done before him, and his fame came to us not merely on what he did, but on what he suggested might be done." (Sir William McCormac, Hunterian Oration, 1899.)

Stanford University School of Medicine.

CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

HEMOCHROMATOSIS IN A JAPANESE

CASE REPORT

By Garnett Cheney, M. D.
San Francisco

HEMOCHROMATOSIS, or Bronze diabetes, has been described as cirrhosis of the liver, plus pigmentation of the skin, plus diabetes, the last usually occurring in the later stages, but not necessarily present. Less than one hundred cases have been reported in the literature, and only three in Japanese. The positive clinical diagnosis is based on the demonstration of hemosiderin in a piece of excised skin; the pathological diagnosis on the presence of the two characteristic pigments, hemosiderin and hemofuscin, in the liver, pancreas and other organs. This case did not have diabetes, but the pathological findings fulfilled the criteria for diagnosis required by Dr. F. B. Mallory. Clinically the diagnosis of hemochromatosis was suggested after the unusual pigmentation was noted.

CASE REPORT

Mr. D. S. Y., a 35-year-old Japanese teacher of English first came under the medical observation of Dr. W. F. Cheney in 1911 complaining of stomach trouble. I am indebted to him for the history up until 1927. The family history and marital history were not unusual. The patient had dysentery in Japan in 1902. He did not drink and there was no history of exposure to copper. He came for treatment of sour stomach, constipation, headaches and protruding hemorrhoids, and also stated that he had the habit of rumination. His appetite was good and he could swallow a "gallon of food at a time," and bring up any amount of it up to several hours after ingestion. He had been on a restricted diet and losing weight for two years. Physical examination showed him to be small, pale and poorly nourished, but there were no abnormalities of eyes, throat, neck, heart, lungs, abdomen, reflexes or skin. The stomach outline after inflation with carbon dioxid indicated dilatation. The urine was negative. A single extraction Ewald test-meal analysis revealed a total gastric acidity of 12 degrees, with no free HCl. He was put on treatment for chronic gastritis and achlorhydria which included elixir of lactopeptin which contains 18 per cent alcohol, and hemaboloids which contain 17 per cent alcohol. He improved.

He continued his medicine for nine years when he returned with the same symptoms as before which had grown worse after influenza one month previously. He had had several minor operations for bleeding hemorrhoids. He weighed less and his abdomen was somewhat tender to palpation. The gastric test meal showed 4 degrees total acidity and no free HCl. Treatment was continued and he got on fairly well for two years, but in March, 1922, he entered the hospital for removal of hemorrhoids, which was done. At that time his urine and stools showed nothing unusual, and the Wassermann reaction was negative. The blood count was 3,470,000 red blood cells and 3,250 white blood cells. The hemoglobin was 67 per cent. A fractional gastric test meal showed no free HCl in any of the specimens and a very low total acidity. An x-ray of the gastro-intestinal tract was reported normal except for adhesions about the cecum. Just three years later he again sought medical advice, as he had been vomiting small amounts of bright blood. The physical examination was the same as previously, but the stool was strongly positive for occult blood. The blood count showed a moderate anemia with 5000 white blood cells and normal differential count. A gastro-intestinal x-ray examination did not reveal an ulcer or neoplasm and fluoroscopy of the chest was negative. In view of the hematemesis, cirrhosis of the liver was suspected although the organ seemed normal to physical examination, and the only history of alcoholic intake was that contained in the medicine prescribed.

In October, 1926, he first noted swelling of the legs, and examination showed a very large, smooth, tender liver, edema of the legs, but no signs of ascites. He had only 60 per cent hemoglobin and 2,510,000 red blood cells. A differential white blood count showed 55 per cent mononuclear cells. After three months the edema had increased involving the genitalia and there were signs of moderate ascites, but no distended veins over the abdomen. A gastro-intestinal x-ray series and a barium enema were negative. A flat plate of the abdomen showed an upper abdominal shadow interpreted as due to an enlarged liver. His blood had improved. A month afterward he became semiconscious and was sent to the hospital in January, 1927, where he died three days later. Examination while in the hospital showed an intense chestnut-brown pigmentation of a dry scaly skin, especially over the neck, lower abdomen and shins, and about the mammary glands, genitalia, and anus. Irregular pigmentation over the chest gave it a pronounced speckled appearance. He was emaciated and dehydrated and the sclerae and mucous membranes were icteric. There were many external hemorrhoids about the anus. The blood pressure was 120 systolic, 70 diastolic. Fifteen hundred and sixty cc. of abdominal ascitic fluid was removed, but neither the liver edge nor the spleen could be felt. The blood count was 2,380,000 red blood cells, 13,900 white blood cells with 86 per cent polymorphonuclear leukocytes. The hemoglobin was 68 per cent, giving a color index of 1.4. The urine was negative for sugar, but showed a faint trace of albumin with numerous hyaline casts. The blood Wassermann was negative, the blood sugar was 50 mgs. per 100 cc. of blood, the blood urea was 61.5 mgs. per 100 cc. of blood. The direct Van den Bergh reaction was strongly positive in three minutes, the indirect equaled 25 units. The icterus index was 80. The ascitic fluid was turbid, orange colored, and the specific gravity was 1018. The albumin was 4.5 grams per liter. The cells were 78 per cent polymorphonuclear leukocytes and 22 per cent mononuclears. On the third day he developed râles at both lung bases and suddenly expired.

A complete autopsy was performed. The anatomical diagnosis was hemochromatosis, chronic atrophic cirrhosis of the liver, chronic gastritis with multiple polyps of the stomach, terminal bronchopneumonia and embolism of the right pulmonary artery with infarction of the lower lobe of the right lung. The liver was very small and nodular and on cut surface and routine microscopic examination had the characteristics of the type of cirrhosis described by Laennec. The pancreas and adrenals did not show any unusual sclerosis. Microscopic sections stained for hemosiderin and hemofuscin showed large amounts of hemosiderin present in the liver and pancreas with smaller amounts in other organs. It was demonstrated in the zona glomerulosa of the adrenals. Mallory regards this finding as pathognomonic of hemochromatosis. This pigment was also present in small quantities in the coil glands of the skin from the lower leg. Hemofuscin was present in small amounts in the liver and pancreas, but was abundant in the muscularis mucosae of the stomach. Elsewhere it was present in very small amounts.

Shreve Building.

ACRODYNIA

CASE REPORT

By Rieta Campbell Hough, M. D.
San Diego

STIMULATED by the case report of Dr. J. W. Robinson in the June number of California and Western Medicine, I am reporting the following cases of acrodynia to impress upon the profession that they are of more frequent occurrence than is thought; and that the diagnosis is frequently missed.

Case I—R. B., male child, age fourteen months, first seen by me April 22, 1927, with the following history: Up to February had never been ill and had passed a "perfect first year," weighing twenty-one pounds and twelve ounces on his first birthday. In February, anorexia and listlessness appeared. These grew progressively worse and soon an intractible stomatitis appeared. The child's condition grew steadily worse until when brought in he had the following symptomatology: extreme irritability (he was in the reception room about twenty minutes before admission and I could hear a constant wailing), disturbed sleep—the child slept in the knee-chest position and would waken four to five times a night, howling; extreme constipation; marked drowsiness and apathy if not disturbed; loss of use of his legs; low grade temperature of ten days' duration, 100.4 highest; anorexia—taking about six to eight ounces of milk daily; cold, clammy hands and feet.

When undressed and put on the examining table near a window the child immediately flexed thighs on abdomen and put his hands over his eyes—hypotonia and photophobia; his weakness was extreme, for he could not stand on his legs; his body showed scratches indicating a pruritus; muscle tone nil; his mouth showed an ulcerative stomatitis though the teeth were intact; his hands, wrists, feet, and ankles were purplish red and clammy, with rather a clear line of demarcation.

The child's diet had been prescribed as follows: daily one quart of milk mixed with Roman meal gruel; and cod-liver oil, one teaspoonful twice a day.

There is a great deal of discussion as to the etiology of acrodynia, some observers believing it of dietetic origin, and others favoring an infectious causation. My personal belief is that it is a deficiency disease and belongs in the same class with rickets, pellagra, and beri-beri. Holding to this viewpoint I strive to arrange a diet and treatment which will meet any possible deficiency.

The daily diet I prescribe is as follows:

Butter, two tablespoonsful.

One egg-yolk, at least.

Two to three tablespoonsful of beef juice pressed from seared round steak, very rare.

Four ounces of tomato juice.

No milk (following Porter).

Sun bath, increasing time of exposure as rapidly as possible.

Cod-liver oil is omitted temporarily until the appetite is improved and then started.

If possible, give in addition plenty of vegetables, orange juice, and raw cabbage juice.

The child would not eat all I felt necessary and as he had a marked secondary anemia he was given 2 cc. iron cacodylate (Roger) intramuscularly twice a week. The child showed marked improvement after this, appetite picking up, and a progressive though slow gain being made. His hands and feet never reached the vesicular desquamating stage, and he never lost an ounce after the treatment was started. His initial weight was nineteen pounds and eleven ounces; at the end of June his weight was twenty-two pounds and four ounces. At this time he was walking and apparently recovered. On July 12 the child developed pertussis, but went through the attack with no difficulty; on September 6, weighing twenty-four pounds and four ounces. He is bright, active and happy, and apparently normal in every respect.

Case II—The second case was an advanced case of acrodynia in a 17 months old boy. The diet that this patient had received consisted of one and one-half quarts of milk that had been boiled three minutes. The same change was made in his diet, and in two weeks he had made remarkable progress.

In these patients it is possible that treatment may be commenced at the turning point of the disease and that the patient might have recovered without a change in treatment.

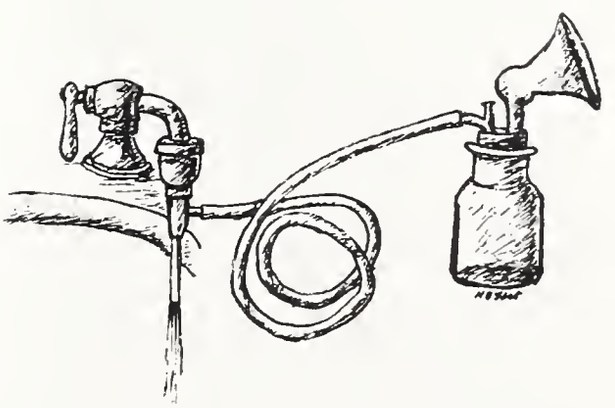
726 Electric Building.

A SYPHON BREAST PUMP

By Harry S. Fist, M. D.
Los Angeles

THE mechanical breast pump is a boon to obstetricians and should be more generally used. Expense and bulkiness have heretofore prevented.

The water suction apparatus is not new, but has been used for some time by several men. It is efficient, yet so small and inexpensive that it can be universally used. It consists of a suction pump as used in laboratory practice, a breast cup with collection bottle as used with the electric pump, and a device for releasing pressure. With suction pumps of this kind, pressure has been controlled by pinching off a rubber tube while suction is desired, and releasing it to discontinue the suction. Patients using it have complained of tiring of the fingers from holding the rubber tube. The apparatus here illustrated utilizes also a T tube, but no rubber tubing, using instead an opening which is easily closed by placing over it the finger tip.



To empty the breast, suction is maintained until the flow of milk stops; suction then is released and reapplied. By using a long rubber tube (the heavy variety used for stethoscopes) the pump may be attached, if necessary, to a faucet twenty or more feet from the bed.

The shape of breast cup here illustrated, with the bulb at the center, eliminates pressure on the nipple, thus facilitating free milk flow. It is sold

by Pilling and Son. The pump and tubing are obtainable at practically any instrument house.

While the author does not claim any originality, this device is of so much value in developing a milk supply and involves so little expense, that he feels it should be more generally known to the profession.

2007 Wilshire Boulevard.

SENILE CATARACT*

REPORT OF CASES

By PELEG B. WING, M. D.
San Diego

SINCE I first operated on cataract in Tacoma, Washington, in 1889, I have used the combined method. In only a few cases have I done the simple operation, only three in capsule. This report is on forty consecutive cataract operations done at Mercy Hospital, San Diego.

Never have I dislocated a lens into the vitreous and never but once used the wire loop, and that was a case with old adhesion of the iris. For a period of eighteen years I did not as a rule use a speculum and did not do a preliminary iridectomy.

Since coming to San Diego in 1919 I have found the majority of patients more restless and nervous than in the north. I do not know why, unless it is the climate. However, I have never had a case of mania following the operation here, which sequel occurs about once in every two hundred to three hundred cases, while in Tacoma I had four such cases. Here I give the nervous patient ¼ grain morphin and 1/150 of scopolamin forty-five minutes before operation. I have never seen any bad symptoms from its use and it controls the patient.

I have made it a practice to do a preliminary iridectomy. It educates the patient and accustoms him to hospital usage. After two days in the hospital for the iridectomy an interval of three weeks elapses between the iridectomy and the cataract operation. I use a speculum for this work and make a small incision in the clear corneal margin. When the extraction is done the iris is not touched except to replace the corners and there is no pain to cause the patient to squeeze the eye. I use a sharp needle like the pointed cystotome designed by the late Prof. Francis Valk and lacerate the capsule in a circular manner so a large portion of the anterior capsule is removed with the lens—all soft lens matter is gently removed as far as possible. A piece of moist gauze is applied, then cotton, then another layer of gauze over both eyes is fastened by adhesive strips. The moist gauze adapts itself to the curvature of the eye and holds the lids steady. Pressure in the dressing is to be avoided.

As a shield I use a home-made affair that is comfortable and efficient. I take the fiber cover of some small notebook, cut out a circular oblong large enough to cover the eye, cut from the edge to center, make a central opening about one-quarter inch, then lap and glue the cut edges which makes a flat cone-shaped light rigid protector. The central hole is sufficient for ventilation.

A word as to the preparation of the patient:

Have the patient take a cathartic the night before he enters the hospital. The following day when he enters the hospital his diet is light. On the morning of the operation he has an enema. With such preparation he will not be disturbed on the day of the operation and can rest for two or three days without a movement. A laxative like cascara followed by an enema can then be given. Patients who cannot easily use a bed pan are allowed to get from the bed to a chair at the bedside, often with less exertion and better results.

Preparation of the Eye—Look carefully for traces of pus from the tear sac and never operate when present until the condition is cured or the sac has been removed. Carefully examine the secretion from the eye, if any.

Cleansing the Eye—After the application of cocain 5 per cent, two or three times, the eyelids and face are carefully washed with soap and water, the eyebrows clipped if at all long, the edges of the lids carefully cleansed, and a 10 per cent argyrol solution freshly prepared is dropped in the eye and allowed to remain about five minutes. Then the eye is douched with boric solution, lids everted and upper and lower cul de sac irrigated. The argyrol coagulates all secretion which is easily removed leaving a cleaner field than scrubbing, with minimum irritation. Cocain is used for five or six times before operation.

The operation is then performed, an assistant holding the lids apart with his fingers wrapped in a layer of gauze to prevent slipping. The hand rests on the brow and forehead and so controls the muscles, and is preferable to any hook or retractor. I operate without gloves, but both myself and assistant wear masks.

The incision is made deeper than the one for the iridectomy. I am not in favor of a large conjunctival flap, as I believe it tends to close the wound superficially and to cause the rapidly reformed and confined aqueous to separate the edges of the corneal incision, thereby causing a slower and more irregular healing and a greater degree of astigmatism. Neither am I in favor of sutures. As little manipulation as possible is my motto.

After Treatment—After treatment is as important as the operation. I change the dressing after twenty-four hours, but do not open the eye unless symptoms demand it. Carefully cleanse the edges of the lids, apply borated vaseline and clean dressing. This is done every twenty-four hours. At the third dressing the lower lid is depressed and a 1 per cent solution of atropin is instilled. This is repeated at each dressing. If all goes well, the unoperated eye is left uncovered on the fourth day and the patient allowed to sit up either on bed or in a chair by the bedside. The operated eye is covered for eight days, then uncovered during the day, when pale-smoked glasses and an eyeshade are worn. If all is quiet there is no necessity for examining the wound or disturbing the eye more than as outlined above. I allow patients to go

* Read before the medical staff of Mercy Hospital, San Diego, March 15, 1927.

home in twelve to fourteen days provided they reside in the city where I can see them occasionally and if good care is assured.

The appended table lists the results obtained in the last forty cases operated in Mercy Hospital, covering two and one-half years' work:

Two cases lost by iridocylitis.

One case, following an iridocylitis, has 20/200 distant vision; can read coarse print.

One case died from cerebral hemorrhage before the eye recovered.

Of the remaining thirty-six fairly satisfactory results were obtained in each case.

One case has 20/70 vision, which can be much improved by discission of capsule.

One case, 20/50, which also can be improved by discission.

Two cases, 20/40, subject to improvement in the same way.

Thirty-two cases have 20/30; discission has been done in five cases, two for simple capsule, two for iridocyclitis, all getting 20/20 vision; one will bear further description.

Patient: Male, age 64 years. Right lens ripe, left—partial on June 15, 1925. I operated on right eye. Patient discharged from hospital in twelve days, eye quiet, very little congestion. At end of three weeks patient reported to the office. Vision with approximate correction was 20/20 and J No. 1, easily. As I was going to take a short vacation he was told to keep quiet, make no exertion, in all ways to "let his moderation be known to all men." Three or four days later he mowed his lawn, dug around his rose bushes and garden and went to the beach, surf bathing. The eye became inflamed. Not knowing where I had gone he consulted another oculist who thought it nothing serious. Next day or two pain became severe, atropia was used. Another oculist was called and a general practitioner to see if there was any central origin of the trouble. I was sent for and found patient in severe pain, and anterior chamber filled with blood, perception of light only. He was treated with atropin and dionin. Hot fomentation and injections of goat's milk which, by the way, produced no reaction. The pain and inflammation slowly subsided. The cataract slowly progressed in left eye. Eleven months from the time of the extraction the pupil of right eye was drawn up and occluded, or nearly so, there was one small spot where I could get a red reflex. Perception and projection of light was good. I did a transverse iridotomy, aiming to cut the iris across the part of greatest tension. Owing to the stretching of iris the pupil was not exactly central, but extended rather to the nasal side. The eye was not examined for four or five days, when, much to my disappointment, I got no red reflex. The new pupil was dark and no sight, perception of light remained. When I operated there was no hemorrhage into the anterior chamber, just a clean cut.

Four or five days after, the patient came into the office and said, "That cloud has broken up and I can see between the clouds." Ophthalmoscope showed a mass of floating bodies like pieces of paper in the anterior vitreous. They gradually cleared under atropia and dionin, until today there is scarcely a trace. This was doubtless caused by a hemorrhage into the anterior vitreous. In August he made a trip East, wearing temporary glasses. Upon his return on November 24, 1926, I gave the permanent correction, which was:

Plus 10 sph., with plus 3 cyl. axis 120, for distance, and a plus 14 sph., with plus 3 cyl. axis 120 for reading.

Now comes the surprising part. He read without hesitation, 20/10 — the 10-foot line at 20 feet, and of course his near vision is perfect. December 1, I operated on the left eye. He left the hospital December 12.

Today, March 1, he has 20/10 in right eye and 20/20 + in the left, and is doing very fine work without difficulty and says he sees better than he ever did.

520 E Street.

The Cancer Campaign—A two weeks' intensive campaign of popular education regarding cancer was inaugurated in the New York Academy of Medicine, November 22, at a meeting of prominent medical men. The important measure that was undertaken was the preparation of brief articles on cancer to be published in the New York City daily newspapers. How nobly the newspapers responded is shown by the following letter from Dr. J. C. A. Gerster, the chairman of the New York City Cancer Committee, published in the New York *Herald Tribune* of December 14:

"The work of the *Herald Tribune* and of other New York newspapers in the cancer campaign now drawing to a close is almost without precedent in the history of public health education, and its significance should be called to the attention of your readers.

"The newspapers have long been recognized as among our greatest educational institutions. Health education is a comparatively recent journalistic venture. It has come to stay. The public probably seeks medical advice from the newspapers as eagerly as from the medical fraternity itself. The cooperation established between two such forces as the press and the American Society for the Control of Cancer is a milestone worth noting—an amazing contribution to the cause of public education. In seventeen New York City newspapers on twenty consecutive days 205 individual stories about cancer appeared, covering 2118 inches of space, or 100 newspaper columns. Moreover, following your lead, 114 newspapers throughout the country also carried the message.

"From authentic sources I learn that there are now in our New York hospitals patients who applied directly because of what they read, were found to have early cancers and now possess the best chances of escape.

"In the name of these fortunates and in the name of the New York City Committee of the American Society for the Control of Cancer, accept our gratitude and thanks for your great contribution toward the relief of suffering humanity."—*New York State J Med.*

Cooperation in Work for Boys and Girls, New York City—Twenty-five of the eighty-eight social agencies caring for New York City's dependent children have organized as a section of the Welfare Council of New York in order to coordinate their activities and eliminate needless duplication of work. All existing agencies will be invited to send delegates to the council.

The Welfare Council is now making a study of boys' work activities in Brooklyn, preliminary to a similar study for New York City as a whole. When completed it is intended that this study shall present an accurate picture of facilities for social work among New York's half-million boys.—United States Department of Labor.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

MANAGEMENT OF THE PATIENT WHO HAS BEEN UNDER PROLONGED TREATMENT WITH ARSPHENAMIN AND BISMUTH, AND IS STILL FOUR PLUS

Harry E. Alderson, San Francisco—This subject is so broad in its scope that it cannot be discussed fully in a "Bedside Medicine" article, but a few general suggestions that may be of assistance are offered. In the first place it should be strongly emphasized that no syphilitic should be so neglected in the early part of his treatment that he reaches the so-called Wassermann-fast condition. Failure to treat properly in the beginning of the disease may be due to the patient's carelessness or lack of cooperation from other causes (ignorance, cultism, or poor advice) or to inefficiency on the part of the medical attendant. For fifteen years we have been giving all syphilitics printed information explaining the nature of syphilis, its complications, and the prime importance of early and continuous treatment. This has been of very great assistance in keeping these patients under treatment and proper supervision.

Sometimes too much attention is paid to specific medication, concentrating on the spirochetes rather than the patient. Routine treatment is important, of course. The individual should never be overlooked and every effort should be made to build up his resistance from the very onset of the infection. Probably in many cases arsenic-resistant spirochetes are produced through giving arsphenamin in too small doses or at too great intervals. These remarks are occasioned by the fact that too many old syphilitics come to us with every evidence of having had inadequate early treatment. Prompt early treatment by specific drugs judiciously administered and proper diet, exercise, fresh air, and physiotherapy will secure complete early eradication of the disease.

In these old cases we have to depend a great deal upon auxiliary measures. Through the various agents of physiotherapy we aim to build up the patient's general health. This treatment naturally has to be modified to suit the case. In our efforts in this direction we should remove every disturbing factor. For example, eradication of definite foci of infection is called for. We occasionally observe very marked serological improvement to follow combined eradication of streptococcal foci and arsphenamin injections. It may be that this surgical procedure produces an effect like that caused by shock from foreign protein injections. Temperature elevation produced by protein or malaria injections lowers the resistance of the spirochetes, thus making them more vulnerable, and it also inhibits reproduction of the organisms.

It should be remembered always that as time goes on the spirochetes tend to become localized and often foci are formed in tissues or organs where they are not so easily reached by blood stream medication. Most often, of course, these foci exist in cardiovascular or cerebrospinal tissue. In some obscure cases liver lesions may be suspected. That spirochetes may exist in "nests" for months or years is proven by the appearance of chancre redux (a gumma appearing at the site of the original primary lesion).

Shock therapy (milk, bacterial, malarial, prostate, or other injections) by producing a reaction in the patient will bring about marked improvement. Combined with arsphenamin, bismuth or mercury injections, this treatment is definitely beneficial. It is a serious mistake to attempt to outline any routine course of therapy for these cases. The treatment must be individualized. In some cases the auxiliary treatment must be combined with arsphenamin, in others with mercury, or bismuth or iodid—or all may be used. Do not forget that you are treating a patient and not a disease.

* * *

Irving Bancroft, Los Angeles—There are some cases of syphilis in which the Wassermann reaction remains positive in spite of all methods of treatment Before any case is labeled as Wassermann-fast, all the usual methods of attack should be used and the various drugs changed at intervals. It should also be borne in mind that most syphilitics are undertreated. If, on the other hand, efficient treatment has been given for a sufficient time and the Wassermann still remains positive, we should content ourselves with the thought that a positive Wassermann never killed anyone and, after all, maybe this positive Wassermann is an evidence of a certain degree of immunity.

The preponderance of evidence is that a positive Wassermann has more to do with the immunological response of the individual than with the activity of the disease. Moore and Kemp have shown that when a Wassermann is late in developing that the resistance of the individual is less than when it becomes positive early. Chesney has shown that treated rabbits, in which the treatment has been begun late, are refractory to a reinoculation and that they are still refractory after all evidence of activity has disappeared. In other words, there is a certain immunity developed after prolonged treatment. He has also shown by experiments that this immunity exists at a time when

inoculation of the macerated glands and tissues do not result in spirachetal growth.

It is probable that in every case of syphilis there is some fibrosis of the heart and blood vessels, especially the aorta. This is the price of the degree of latency which we call a cure. The long-continued assaults of arsenic, mercury and bismuth on the liver and kidney put a similar price on treatment, and so it is up to the physician at any time during the treatment to balance the two. Are the little spirochetae in their nests of fibrous tissue less harmful than the metallic molecules which are continually assaulting the liver and kidneys. This balance has a definite relation with the time when the term "Wassermann-fast" should be applied.

When the term "Wassermann-fast" definitely applies to a case it is time to give up trying to kill the spirochetae and turn to smothering tactics. In other words, it is time to turn to the development of natural immunity. Non-specific medication is possibly the first method to consider. From 2 to 5 cc. of boiled milk or aolan should be injected intramuscularly. Five doses at weekly intervals may be used. It is assumed that periodic examinations have been made at intervals during the treatment. At any rate at this time a complete examination should be made and all defects should be corrected. This should include a complete spinal fluid and neurological examination and an x-ray of the aorta. General hygienic advice should be both positive and negative. Positive, by prescribing a diet and regimen, and negative, by prohibiting all mental and physical strain, as it is conceivable for a fibrosed aorta to last for many years if not strained, and we often see a luetic nerve system which functions satisfactorily for years but which breaks down when abused.

Practically all of these Wassermann-fast conditions are in persons who have had the infection for years, and when we start the treatment of these cases we should realize that a considerable proportion have a Wassermann which no treatment will modify The unfortunate part is that the negative Wassermann has been upheld as the goal, and when it becomes apparent that it is not attainable, the effect is as disillusioning to the patient as to the child who is informed that Santa Claus is a myth. We should in these cases rather stress that the goal which we are striving for is a state of health in which the signs of syphilitic degeneration are so small that they cannot be detected.

* * *

Hermann Schussler, San Francisco—Few problems of modern clinical syphilology are as pressing and as difficult as the management of so-called "Wassermann-fast syphilis." In the first place, since we do not know the ultimate biological mechanism of the Wassermann reaction, it is difficult for us to determine the exact significance of the asymptomatic "fixed positive." Wile of Ann Arbor, in a most interesting paper, intimates that the fixed positive should not be regarded as absolute proof of continued spirochetal activity, but may at times be merely a "scar," comparable to an old corneal opacity from a previous interstitial keratitis.

Accepting, as is commonly done, the positive Wassermann as definite evidence of uncured syphilis, like a mucous patch or a gumma, what are the factors that make this one isolated symptom resistant to prolonged and intensive treatment when all clinical symptoms and signs have long since yielded? Three such factors are recognized at present, and will be taken up in order, with therapeutic suggestions appropriate to each.

1. An undiscovered focus of the disease may exist, usually in the aorta, central nervous system, liver, or bones, into which the specific drugs have not been able to penetrate in effective concentration. Here all the facilities of modern diagnostic procedure must be brought into play. A spinal puncture and a complete neurological examination will often disclose entirely unsuspected lesions in the nervous system. X-ray studies of the heart, aorta and skeleton may reveal latent cardiovascular or osseous syphilis.

In all these cases, drugs of increased penetrating power should be employed. The following routine is suggested:

Novasurol is given intravenously twice a week, the dosage being 0.8, 1, and thereafter 1.2 cc. After twenty such doses, neoarsphenamin is given twice a week for ten doses of 0.6 to 0.9 grams each. Mesurol, a highly potent but painless form of bismuth, is given intramuscularly on the same days as the last two novasurols and all the neoarsphenamins, making twelve doses of 1 cc. each. The above course, which lasts thirty weeks, is repeated without rest periods until the Wassermann test is negative, and once thereafter potassium iodid should be given by mouth at the same time, 1 or 2 grams before meals and at bedtime. Silver arsphenamin, 0.2 to 0.3 grams, may replace neoarsphenamin in alternate arsenical courses.

2. The patient's spirochetes may have become resistant to the drugs that have been employed. Here we must vary the mode of therapeutic attack as widely as possible by employing new preparations and new routes of administration. For this type of case the routine suggested above often works admirably. Novasurol intravenously is an ideal way of giving mercury. Mesurol is highly praised by German authors for its rapid serological effect. I still believe that a high grade neoarsphenamin, given twice a week in 5 cc. of normal salt solution, is the arsenical of choice. The use of saline generally permits an 0.9 gram dose.

3. The patient's natural defense mechanism may have broken down, and must be rebuilt before further progress can be made. A rest period from specific drugs is first in order, with mental and physical rest and nutritious food. During this time the old heavy metals must be eliminated by a course of intravenous injections of sodium thio-

sulphate, given three times a week for a month or two, the dose gradually increasing from 0.2 to 1 gram. During this time all focal infections in teeth, tonsils, sinuses or prostate must be found and removed; and all functional disturbances such as hypothyroidism or achylia gastrica, corrected by appropriate medication. Finally a course of twelve intramuscular injections, given twice a week, of 5 cc. of whole boiled milk will complete the patient's non-specific immunization, after which specific therapy may be resumed with greatly increased effect. Always remember that you are treating a human being, not a laboratory report.

* * *

C. E. Schoff, Sacramento—When considering the subject of this discussion one must realize that he is dealing with one of the greatest enigmas of modern medicine. The entire field of syphilology must be reviewed and also the therapeutic procedures that have led to the conclusion that the end-results of medication have not accomplished the much sought and expected laboratory index of complete control of the afflicted.

As time goes on and as our experience becomes wider in the field of syphilitic therapy it seems that we must more often agree with Dr. Udo Wile that there is fallacy in the continued effort to treat a physically well patient with a persistent positive serological finding; that much harm has and can be done to the very important liver and kidneys in these cases; and that we show too little mercy on these organs until the danger signs are quite obvious in our effort to achieve a technical advantage.

It is needless to repeat the admonitions of the previous discussers that we exhaust every diagnostic means both clinical and laboratorial in an effort to uncover a possible focus which might explain the persistence of the blood findings. There is one point, however, which does bear repetition and one which is too often overlooked by the therapeutist in his anxiety to administer the so-called specific medications, and that is the general condition of the patient. One of the best assets to a more favorable recovery is a good physical condition, and every effort should be made to attain and to keep such condition from the earliest date of treatment.

The changing of arsenicals, mercuries, and bismuths, all fortified with the iodids, are added ammunition to the therapeutic arsenal. Too often we learn from the patient that persistent reactions following each treatment are signs of high chemotherapeutic efficiency of the drug administered. I certainly cannot subscribe to this reasoning and must believe that these reactions are more harmful than beneficial and contribute ultimately to the Wassermann-fast factor in some cases.

Meyer's work with sodium thiosulphate certainly deserves consideration in these Wassermann-fast cases. He has unquestionably proven that this drug has a therapeutic value; that arsenic is held as an insoluble compound in the chemical cellular elements of the skin for months and years, and that it can be liberated by the use of sodium thiosulphate properly administered. The writer has corroborated Meyer's findings in a limited but encouraging use of sodium thiosulphate in the so-called Wassermann-fast or arsenic-fast patients who have previously been under all types of medication for four and five-year periods.

It is impossible for anyone to outline a definite routine procedure of treatment for the type of patients under discussion. Each patient must be individualized, and when the clinician determines that the persistence of the serological findings is not associated with any definite focus and that the general condition is about par, he should endeavor to retain this condition of general well-being and lay less stress on the laboratory findings.

Pressing Kills Germs, German Scientist Finds—Berlin—Science has discovered that the pressing of clothes has a higher function than that of merely keeping a knife-edge crease in trousers. Prof. M. Hahn, director of the Berlin Hygienic Institute, has recently performed experiments with mechanical ironing machines whereby overcoats, trousers, and blankets, were completely sterilized of disease-producing bacteria.

Through the entrance of steam into the ironing plates, a temperature of from 212 to 223 degrees Fahrenheit can be obtained in a few seconds, the scientist and his assistants report. This can be raised to 252 degrees in a comparatively short time. The time period is so measured that every fabric, according to its thickness, is exposed to the steaming from twenty-five to thirty seconds.

Thick overcoat materials which had been smeared with many kinds of dangerous bacilli, and camel's hair blankets were found to be entirely freed by the ironing process of pus-forming bacteria and germs closely related to the typhoid bacillus. Tuberculosis bacilli placed in trousers pockets were killed in thirty seconds by the application of steam. Spore-forming bacteria required longer treatment. At least eight minutes of ironing was necessary to destroy these resistant types, it was found.

While disinfection apparatus is still advisable for rendering a large quantity of materials free from germs, the use of ironing machines is especially valuable for small and moderate-sized hospitals, sanatoriums, hotels, and sleeping cars, Professor Hahn pointed out, because the apparatus is inexpensive and easy to operate.—*Bull. Wayne Co. Med. Soc.*

The Public Health Service continues to provide medical and hospital treatment of sick and injured American merchant seamen and other government beneficiaries—the oldest function of the service and the specific purpose for which it was organized under the act of July 16, 1798, 129 years ago—and probably at no time during this period has the aid thus given by the government to American merchant vessels been of greater value or of more importance in keeping the American flag on the seas.

More than 300,000 beneficiaries apply annually at 152 ports of the United States and its insular possessions where marine hospitals and relief stations are maintained for the giving of hospital and out-patient treatment and making physical examinations. There were 1,288,061 hospital days' treatment given, mostly to merchant seamen and coast guardsmen, and 632,341 separate out-patient treatments were supplied. The American seamen are the principal beneficiaries, receiving 67.4 per cent of all the hospital treatment furnished. The Coast Guard furnished 14 per cent of the clientele, while the Employees' Compensation Commission constitutes about one-fifth of the total of the service beneficiaries.

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Contributions—Exclusive Publication—Articles are accepted for publication on condition that they are contributed solely to this journal. California and Western Medicine has prepared a leaflet explaining its rules regarding publication. This leaflet gives suggestions on the preparation of manuscripts and of illustrations. It is suggested that contributors to this journal write to its office requesting a copy of this leaflet.

EDITORIALS

MEDICAL SOCIETIES AND REAL ESTATE OWNERSHIP

Few guilds are older than the profession of the healing art. Marked as is the profession, by the dignity and worth of its work and its long record of honorable achievement and service in practically every civilized country on the globe, it is more than astonishing that the societies of this great profession have never seemed to actively sense either the direct advantages and comforts of buildings of their own, or the large indirect good that would come through the prestige of such material possessions.

It may be said of the members of the medical profession, as individuals and in their societies, that too often they have been distinguished by a seeming complacency with their academic discussions; and so much so that they presumably have given little more than transient thought to the ownership of buildings in which could be housed their meeting rooms, museums, library alcoves, and other accessories; and the possession of which would go far in raising the tone of professional education and practice, as well as in promoting among the laity a greater respect for those practitioners of the healing art who stand for decent standards of preliminary education and of professional training and work.

* * *

It is true that abroad, and also in a few of the older cities of the United States, there do exist buildings which are owned and operated by medical organizations, but the number of such is not at all what might be expected of us. Especially so, when we consider how in late years social and business clubs and organizations of comparatively recent origin have been able to erect splendid structures, which not only give facilities for all the activities of such groups, but which ofttimes also are provided with rental areas that help care for the overhead of maintenance of the structures and of the club departments housed therein.

* * *

An equally striking and perhaps more remarkable exhibition of this loyalty to group traditions and ideals which manifests itself in the erection of club houses, is to be seen in the chapter houses of the Greek-letter fraternities. These organizations are a conspicuous feature of American university and college life. Here groups of young men, ten to thirty or so, mostly in the age period of fourteen to twenty-two, under their own and the guidance of alumni or graduate members, find themselves housed during the nine or ten months of the scholastic year in structures ranging in cost from a few thousands to one or two hundred thousand dollars.

This widespread college fraternity building activity that has come into existence in large part only in the last two or three decades should make every one of us ask the question: "What is there in a college fraternity, in the way of nobility of ideals or service, over and above that existent in the practice of the healing art that should lead college fraternity men, for instance, to generously plan and bring about the construction of chapter homes; when, on the other hand, the members of the medical profession, with equally good or higher ideals and service, and also the economic necessities of their calling, are seemingly indifferent to the construction of meeting place and study homes, although needing the same as much or vastly more than do some of the Greek-letter guilds?"

* * *

When in our respective communities we note how all types of organizations, such as churches, clubs, and what not, devise ways and means and successfully build homes in order to better carry on the work for which they came into existence, we must certainly acknowledge that for so ancient and honorable a guild as our own we have on the whole little to boast about when we contemplate the few buildings owned by our societies. Why should this sad condition obtain? And if it does, is it not time that we set about gradually to bring into being a better state of affairs? Are not our obligations to our profession both those of the today and of the future; and will we progress greatly, either singly or as a group, if we fail to think and to plan for the morrow?

* * *

In the medical profession a medical society that has its own meeting halls, its library, its museum, must certainly be assumed to be more virile than one which does not possess these things. It certainly has conditions favorable to greater development for its own members. For such facilities are the groundwork upon which after-graduation

study and work can best be erected; and when brought into being in any community, mean that the members of the profession there residing have provided themselves not only with local postgraduate facilities, but also with the inspiration that results from the better work that is always associated with increased study and knowledge. In other words, in such communities, with our medical societies properly housed, we who use these homes, should become better doctors than would otherwise be the case.

These lines are prompted by the hope that many members in the various component county units of the California Medical Association may make inquiry of themselves as to the reasons why their own societies should not consider the financing of medical society homes in their respective communities; such society homes, of course, to be in harmony with the size of the organizations and environments involved.

* * *

It is not claimed that such medical society homes can be built in a year, but certainly, after consideration and discussion, the movement to institute a building fund for such a future home may be started at almost any time; if the members of the profession in any locality properly visualize their problem.

All that is necessary in the smaller organizations is a board of, say five trustees, one to be elected each year for a five-year term, to whom all subscriptions would be pledged or paid, or who as a permanent quarters board would conserve such funds for home purposes and make the acquisition of a society home a major problem for study and action in each such community or county.

In the larger organizations a more complex method of procedure would be necessary. Here in California the method of incorporation of society officers, recently permitted by the state and put into operation by the San Francisco County Medical Society, is a very good plan to use as a model.

* * *

In this connection it is very gratifying to call attention to the fact that in the last few years the San Francisco and Los Angeles county societies have come into possession of properties valued at many thousand dollars; so that in the next five years or so we shall probably be able to witness a splendid expansion of those active organizations.

What those two large county societies of the California Medical Association have been able actually to accomplish, in lesser measure but nevertheless as efficiently for local needs, may be accomplished by other county units of not so large a membership.

* * *

In Los Angeles, when Dr. Harlan Shoemaker in the year 1920 urged the purchase of a certain lot at a price of $24,500, the Association had in its treasury not more than $5,000. Fortunately, by the good fortune of transformation of the street on which this purchased lot was located into a business thoroughfare, the property increased enormously in value. Then new thoughts and plans came into existence; and the Association, still owning the first lot, purchased a splendid second lot, 200 feet front by 175 feet deep, only a few blocks away from the other, for the sum of $80,000; and on this property the society intends to erect its future home.

In the meantime the first lot has been leased to a corporation composed largely of physicians, who will erect thereon a medical office building; and the rental for the use of the ground will in a few years net the county medical society an income based upon 10 per cent of the gross receipts of the building, with a minimum guarantee of $15,000 a year rental. An interesting feature is the fact that the lease has been so drawn that a self-appraising rental will be worked out on the basis of the income of the building.

At this time it is estimated that the value of the real estate of the Los Angeles County Medical Association which has been purchased in the last seven years has a value of about $380,000.

* * *

In San Francisco, equally meritorious work has been done, that pioneer county unit purchasing outright the Irwin home, built by one of the great San Franciscans of the days gone by at a cost of thousands of dollars, the property being purchased practically at the lot value alone.

* * *

In Los Angeles a goodly proportion of the funds needed in these purchases was raised through subscriptions of $100, which were made by the majority of the members of the society, and which, if so desired, were payable in annual installments.

Analogous methods of procedure have been used in many other organizations. If one uses good judgment in the selection of the property purchased, if property is bought within the means of the present and prospective funds, then a start may be made along these lines, much as college fraternity and other organizations have done over and over again, and as we hope medical societies of today and tomorrow will also do.

* * *

In order to start a building fund in substantial manner, through one hundred dollar subscriptions as outlined, the organization may proceed as already described. If it is not desired to make such subscriptions compulsory on all members, it could be provided that all members of the society who paid the annual dues would be "members" of the said county society; whereas all those who subscribed for the one hundred dollar building fund subscription would be known as "fellows" of the said county society.

That is practically the same plan as is in vogue in the American Medical Association, in which all who are members of state society units are "members of the A. M. A."; whereas those who pay $5 a year to the national organization, are known as "fellows of the A. M. A."

In the national organization, for the $5 so paid, in addition to the "fellowship," is also given the *Journal of the A. M. A.* In our county units, by a similar plan, in addition to the "fellowship in the county society," would go the right to be a

part of the "permanent quarters fellowship," and the right to vote for the officers and trustees thereof.

Some such plan as this would make it possible to admit every eligible man into a county unit, and would give all members who wished, the opportunity of taking part in the creation of a building fund and home. It may be assumed also that in good time the very large majority of members in any county unit would voluntarily affiliate and cooperate in the further development of such a permanent quarters fellowship. The plan is really quite simple if one is in earnest; and in the light of what other organizations of lesser strength have actually accomplished, quite practicable.

* * *

What has been advocated on possession of property by component county units also may be made to apply to state medical associations.

In the last two years, in our own California Medical Association, this subject has received very considerable attention and has been much discussed by the officers and many members who are interested.

In an organization like the California Medical Association, with some 4400 members, the possession of a headquarters home could be made to offer many advantages not now possessed by us. As a matter of fact, if the fates be kind, it may be possible for the California Medical Association as a state organization to see realized a headquarters dream such as our two largest county units have already brought into existence. And with such possession of headquarters homes by such a triad, we can look forward to the days not long distant when a goodly proportion of our remaining county units will have similar structures to their credit.

* * *

Let us think about it. We live in the today and the tomorrow, rather than in the past. We must move forward, remain stationary, or slip backward. In our own group of followers of the healing art we have ample potential strength to make our movement go forward, and decidedly forward. Headquarters homes for our societies will be a material aid in such progress, and will be well worth the thought and effort we give thereto.

CERTIFIED MILK COMMISSIONS OF COUNTY MEDICAL ASSOCIATIONS

About twenty-five years ago the first certified milk commissions came into existence. The permission to use the copyrighted term "certified" was granted only to committees or commissions of county medical associations. That was a most fortunate safeguard.

In California, the Certified Milk Commission of the Alameda County Medical Association was the first to be organized, being followed shortly after by that of Los Angeles County.

* * *

Today a very different viewpoint is held by producers and laity, concerning the production of pure and clean milk, both as regards certified and ordinary raw or pasteurized milk, than was prevalent a quarter of a century ago.

Much of the credit of this change in attitude must be placed to the propaganda initiated and carried on by the certified milk commissions, in cooperation with the medical profession of our country. It should be gratifying to all who did some of the pioneer work in this phase of public health endeavor to note what far spreading results have sprung from the original effort which was especially designed to provide clean pure milk at least to our invalids and children.

* * *

In California, in addition to the Alameda, Los Angeles, and San Francisco Certified Milk Commissions, which inspect dairies of considerable size, there are a number of commissions in cities of lesser size. Recently the commissions of the three metropolitan centers, through conference, have united on conjoint rules to safeguard the production of certified milk in our state.

As we look back at our original contracts and now read the very explicit rules laid down concerning: (1) the testing of cattle in the California herds, or which are to be brought from other states into the herds; (2) the housing and feeding of the cows; (3) the physical examination of all employees in such dairies; (4) the safeguards concerning water supplies, the handling and cooling of the milk, the rules concerning sewage disposal and many other factors, we see exemplified what is in one sense only an application and amplification of the aseptic precautions in vogue in modern operating rooms of hospitals.

The results of attention to the scientific principles involved in the production of this foodstuff which is capable of ofttimes being an ideal culture medium for certain pathogenic bacteria, shows itself in milk samples which today can be collected at food depots, and which will be found practically free from all forms of filth, and with a minimum of bacterial contamination.

* * *

So pure and clean has the certified milk so produced become, that California, year after year, in spite of the long distance of shipment to eastern cities where the competitions were held, has brought home prize cups offered by the Association of American Milk Commissions; one certified dairy in southern California being especially fortunate in this respect.

* * *

Today the procedures used in producing a certified milk are, in the main, the aids that have gone through the acid test of experience in the last two decades. Our memory goes back to some of the first work done by the Los Angeles Commission when we helped to devise a card for scoring dairies, before even the Bureau of Animal Industry of the United States Department of Agriculture printed its own form; and when we drew plans of simple and moderately priced cooling sheds in an endeavor to entice the ordinary dairymen to cooperate in producing cleaner and safer milk. We still visualize several of the Sunday inspections of the commission, when all the members left the automobile to aid in driving cows

from the bed of the Los Angeles River, so that the then water supply of that city might not be contaminated!

From efforts such as those, in many cities of many states, and through the efforts of the medical men who comprised the certified milk commissions, with the cooperation of federal, state, county, and city public health officials, there came into being, from one end of the country to the other, among both the members of the medical profession and the laity, that better orientation of milk production that has done so much in making this most valuable food safer; so that hundreds and thousands of fellow citizens who might otherwise have contracted fatal diseases through drinking dirty and dangerous milk, are today alive and doing their work as useful citizens of our land.

* * *

For many years the commercial producing and distributing companies, which are such big factors in milk distribution in most metropolitan centers, stood aloof from the certified milk work; hesitating not, however, here and there, to make use of the commission propaganda and good reputation which the word "certified" had built up for itself, to put forward substitute non-copyrighted names such as "guaranteed" or "A1" milk and so on, to make their own milk more attractive to buyers.

However, in the last several years a number of producers of ordinary milk have shown a desire to get into the certified milk business because of the great demand today for such high grade milk. It will be interesting to note how such cooperation will work out.

* * *

It is also worth remembering at this time that the whole subject of the relative value of raw and pasteurized milks and the dangers supposedly inherent in each is being much discussed As a result of these investigations, it is quite possible that California laws on the production and distribution of milk will be brought into operation within the next five years which a few years ago would have met with much opposition. On those phases of the subject, however, discussion is here waived for future occasion.

* * *

In addition to the certified milk benefits above mentioned, others have accrued. For example, reference can be made here to the fact, that from the very modest tax charged to the owners of certified dairies, on the milk-bottle caps which can be used only with the sanction of a certified milk commission, the Certified Milk Commission of the Los Angeles County Medical Association was able during the last twenty years to accumulate a considerable reserve fund in its treasury.

In the early days of that commission's existence, the late Dr. Stanley P. Black, health officer of Pasadena and a well-known member of the California Medical Association, for some years gave his services in dairy and employee inspection, and in chemical and bacteriologic examinations, without cost to the commission.

In honor of his work, and the services which he in those days so generously donated, the Los Angeles Commission during this last month has set aside the sum of $10,000 to be used in the development of the Stanley P. Black Memorial Museum when the new home of the Los Angeles County Medical Association is erected.

* * *

Exemplifying then, do all these things, that "Large streams from little fountains flow, Tall oaks from little acorns grow"; and that if only we be content to meet the problems of each day, then in good time, in proportion to the application and wisdom we display, will beneficent things be bound to come to pass.

The medical profession and the people of America may well be proud of the certified milk commissions and the splendid work by them thus far accomplished.

EXEMPTION OF WELL CHILDREN FROM PHYSICAL EDUCATION

The deputy superintendent of the Department of Public Instruction in a letter to the secretary of the Board of Medical Examiners recently called attention to the abuse of a medical privilege that is destructive of school discipline and authority; that is, the right to exempt from physical education school children with a physical handicap or disability. Complaint was made that well children were able to secure such exemptions from physicians. A case was cited "of a child, who had secured such a statement from a physician of questionable standing, who was not able to be excused by the regular school physician." Mr. Cohn asks what could be done "to strengthen the position of the school authorities against such practice on the part of physicians who have no regard for what the schools are attempting to do in the betterment of health conditions on the part of the pupil."

It would seem that any physicians who have dispensed such certificates must have moved along the lines of least resistance and have thoughtlessly acceded to requests from patients or parents of patients without due consideration of the resulting effect upon the morale of the school and the exempted child. There is no question that the few physicians who may thoughtlessly have dispensed unwarranted exemptions put an onus on the many who are just and fair in their decisions.

Due regard for both the profession and the school authorities demands that such exemptions be granted only to a pupil whose health and well-being will be injured by such exercise. A fair view of the problem will eliminate any possible cause for complaint.

THIS JOURNAL AND ITS FIRST GREAT WORK—PHILIP MILLS JONES AND HIS PART THEREIN

In the Readers' Forum column of the Miscellany department of this issue of California and Western Medicine, is a letter from Dr. George H. Evans of San Francisco which will bear reading and thought by all who are willing to extend their contemplations of the practice of medicine

beyond their own personal professional and economic interests.

To fight the good fight for a good cause is always an inspiring experience. Not that we wish to be Don Quixotes, launching our lances at imaginary enemies or straw-men. Rather to be hard-headed, common-sense individuals, deeply loving this profession of the healing art, its great opportunities for humanitarian and altruistic endeavor which it gives to each of us, and being willing in good faith to battle for its uplift and progress.

* * *

A man imbued with such a viewpoint was the late Philip Mills Jones. When our Journal was founded, Doctor Evans was chairman of the publication committee that had much to do with determining whether or not the views on medical policy of its then editor, Doctor Jones, should be sponsored. In his letter he very properly calls attention to the service which California, some twenty-five years ago, rendered to organized medicine in the United States. For at that time our state society may be said to have launched and led the fight to eliminate what were little more than patent medicine pronouncements from the advertising pages of state, district and national journals, both society and privately owned or controlled.

* * *

It may seem to some readers that in these columns we are overemphasizing this service which was then rendered. Such members should permit the reminder that the elimination of certain proprietary medicines from the pages of ethical medical journals not only took from national and state publications printed matter that was scientifically and ethically offensive, but it brought about one by one the demise or the very decided diminution in influence of a considerable number of private or semiprivate medical publications, which had subsisted in good part on the income from such offensive advertising; and which for that reason were all the more dangerous because their reading columns were used for insidious, unscientific and at times almost reprehensible medical propaganda.

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The Council on Pharmacy and Chemistry of the American Medical Association may be said to have come into being as one of the results of that fight for right. In all these years the verdicts of that Council have been found to have been absolutely warranted in almost every instance. The value of its opinions in moulding the therapeutic practice of the profession of America has been very great; even though often forgotten or not even acknowledged by a host of colleagues, who though profiting from its investigations, in their personal practice seem to be so self-centered that they presumably do not sense how much of their own indirect success may have been dependent upon the sound judgments passed out by this important bureau of our national association, and which judgments all of us, of necessity, must utilize.

* * *

We are glad that Doctor Evans wrote the letter referred to, for he knows whereof he speaks. So do the colleagues, also, who were doing their part for organized medicine with him and others a quarter of a century ago.

We are proud of the late Philip Mills Jones, just as we are proud of the late William Everett Musgrave, the late Saxton Pope, the late James Parkinson, and others who in California and Western Medicine and in other society work aided in the maintenance of the standards for which we of California and the Pacific Slope states have always been steadfast.

* * *

We may be in the far West, and at times some of our confrères in the East may even think of us as wild and woolly, but with this western atmosphere there comes other compensations, not the least of which is, stating what is what, and why is why.

That is what Philip Mills Jones did years ago. His successors also met the issues of their day as those issues arose, and hesitated not to say their say. This spirit of independent thinking and action is one of the wonderful rewards of living in this glorious western country. The Argonauts and Forty-Niners had that spirit to a marked degree, and those of us who belong to a later generation do well to treasure and maintain it.

CARBON DIOXID

One must regret that carbon dioxid finds itself so infrequently available to practitioners. Added, in 1920, to a [rather sorry] group of respiratory stimulants, the gas has been found comparatively dependable and serviceable in various capacities. This uniformity of performance may well devolve from an identity if not a congruence with the physiological stimulus to respiration.

Practically one gives carbon dioxid usually at 5 per cent strength, in either atmospheric air or oxygen. Football bladders, when filled, are of a good size and convenient to handle. The more modern types of gas anesthesia apparatus carry carbon dioxid cylinders. A machine so equipped grants to the anesthetist the most exact form of control. Induction can both be enforced upon and modified for intractable patients. It facilitates quick transfer from one to other anesthetic level. Should the respiratory center turn laggard, breathing often can be fortified. The administration over, expulsion of the anesthetic can be hastened by an artificially induced hyperpnea.

Its earliest application was in behalf of persons suffering from carbon monoxid poisoning. In this instance it is used with oxygen. The ability of carbon monoxid to abstract a variable fraction of the body's hemoglobin and to fix it in stable union leaves the work of normal gaseous exchange for an overburdened remainder. When carbon dioxid is used, quickening and deepening the breathing, and excessive oxygen supplied on which to feed, the work of that fraction which labors is lessened.

The gas is serviceable against the depressions of morphin and alcohol, and has been suggested for such different exigencies as oligopnea in the newborn and for medullary traumata. All of its uses are interesting and many have a proven scientific worth.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Tropical Medicine

Sprue—Sprue is of sufficiently frequent occurrence in California to merit review in this column. Fourteen cases have come under critical study in this service. Persistent, unexplained diarrheas, especially but not invariably appearing in the early morning, with a tendency to bulky fermenting stools, are always a matter of suspicion. Fairly recent residence or travel in the southeastern United States, Caribbean and Pacific islands or the Orient is important contributory evidence. Strangely enough, sprue is not believed to occur in tropical Africa. Sprue cannot be excluded, however, by lack of such residence in the endemic area.

Sprue is a chronic afebrile diarrheic disease which exhibits a progressive gastro-intestinal atrophy of mucosa, stomatitis, and very frequently, anemia and nervous system changes. Exacerbations and remissions are characteristic. The disturbance in the gastro-intestinal mucosa begins as a catarrhal inflammation and progresses toward atrophy, although death may come before definite atrophy. Nervous disorders include mental and somatic manifestations, ranging from moroseness, irritability, and poor memory, to paresthesias, anesthesias, and flexor contractions. It is a disease of diverse symptomatology and insidious onset, which explain its difficult recognition before fairly advanced stages. Like beriberi, it may be considered a group of disease types, similar, but with considerable variation of clinical picture. The anemia is secondary in type at first and begins early. Later it often becomes pernicious in type, although pernicious features at times appear early also. Many cases arise on the basis of a precedent dysentery, usually amebic. Autopsy findings frequently seem inadequate to explain the profound disturbances of physiology seen in life.

Sprue is primarily a disease of the white race, but its major incidence is not in the white man's countries. There may well be clinical, pathologic and etiologic differences in sprue arising in different geographical areas. Exhaustion from overexertion, disease or nervous strain, seems to be an important predisposing factor. Of the causative factors claimed by various writers, none can be fully accepted today. If it is a specific disease, we must consider that the single cause is totally unknown, or that some factor now under suspicion becomes operative under special conditions of physiologic exhaustion or dietary imbalance. The close relation to pernicious anemia is further emphasized by the case of sprue successfully treated with liver diet by Bloomfield and Wyckoff (*Cal. and Wes. Med.*, November, 1927). A case of ours with a less severe anemia was resistant to liver, and remission only followed a series of transfusions. This is in line with the suggestion of Reed and Wyckoff that the methods of treating pernicious anemia and sprue might be interchanged with advantage (Common Picture of Sprue, Pernicious Anemia and Combined Degeneration, Amer. J. Trop. Med., May, 1926).

The treatment of sprue is on a far from satisfactory basis. It may be thus summarized: permanent removal from an endemic district; rest and recuperation by use of climate, moderate altitude and tonic drugs; dietary regimen along the classical lines of Manson, using transfusions and liver or its extracts in addition where the anemia is severe; and the symptomatic use of drugs. This last brings in hydrochloric acid, digestive ferments, astringents, mild colonic irrigations, and occasionally castor oil. Vicarious nutrition by inunctions and intravenous methods sometimes helps. Vaccines and various sera do not seem to us to be advisable.

Alfred C. Reed,
San Francisco.

Cancer

Cancer Research—To even the casual observer it becomes more and more apparent that an increasing volume of laboratory research on cancer is being directed along chemical lines. One of the most interesting of recent publications comes in the form of a "Critical Review" by R. K. Cannan, of the University College, London, on "The Metabolism of Tumors,[1]" one of a series of such "critical reviews" of various phases of cancer research appearing in *The Cancer Review*, an abstract journal founded last year by the British Empire Cancer Campaign and rapidly becoming indispensable to those who would keep in touch with literature of malignant disease.

This article is a summary and comment on a series of papers by Warburg and others on the relation of oxidation and fermentation in malignant and normal tissues. It appears that there are two sources of energy for tissues—the combustion of carbohydrate by oxygen to carbon dioxid and water; and the fermentation (in the absence of oxygen or at least without its use) of carbohydrate to lactic acid; so that carbohydrate may

1. Cannan, R. K.: The Metabolism of Tumors, The Cancer Review, ii, July, 1927, pp. 189 to 202.

be consumed either aerobically or anaerobically. Stated in the briefest possible way, the very complicated and ingenious experiments described seem to indicate that aerobic utilization of carbohydrate (oxidation) predominates in normal resting tissues, while the opposite is true of malignant tissues, where fermentation predominates by an overwhelming ratio.

This observation leads to two very interesting hypotheses. In the first hypothesis—the theory of the origin of malignant growth—Warburg "regards a tissue as a community of cells having wide individual differences in their respiratory (oxidative) and fermentative activities. Thus some few cells of a normal tissue will have all the metabolic characteristics of neoplastic cells. In the economy of the whole tissue their high fermentative activity will make no significant contribution owing to their very limited number. Should, however, a local condition of chronic anoxemia occur, the majority of the cells will be killed, since they will be unable to respire, but the few cells which possess sufficient fermentative activity . . . proliferate, and from them will develop a malignant growth. Thus cancer cells are regarded as present in all normal tissues, and the exciting cause for their proliferation is held to be a sustained lack of oxygen. 'Irritation' becomes 'anoxemia.' This highly interesting view remains, at present, without direct evidence in support or denial."

In the second hypothesis, a novel method of treatment is suggested. It appears that tumor cells are, so to speak, "facultative anaerobes." In the presence of an abundant supply of glucose, fermentation will predominate. In the absence of glucose or in the event of a limited supply, oxidation will be carried on to an extent sufficient to insure survival. But deprived of both oxygen and glucose, tumor cells will not survive. Tumor-bearing rats were kept for from four to forty hours in an atmosphere containing only 5 per cent oxygen. After even the shorter periods, the great majority of the tumor cells had been killed. The tumor was unable to compensate for lack of oxygen by increased sugar supply owing to the relative constancy of the systemic blood-sugar concentration. The expedient is suggested of giving insulin to reduce below normal the blood-sugar at the same time that the oxygen supply is cut down. Possibly the gentleman in Kansas City who is reputed to treat patients in a tank in which the oxygen supply is much increased by raising the air pressure, might be more nearly in accord with experimental evidence if he would reverse his process, reducing instead of raising oxygen pressure and perhaps administering insulin at the same time.

Cannan points out that there are many facts to be explained and many observations to be made before Warburg's theories can be accepted as facts; but that Warburg, and those who have worked along similar lines have opened up an avenue of biological research which will scarcely be denied a rich reward.

Alson R. Kilgore,
San Francisco.

Neuropsychiatry

Emotional Factors in Disease—At the Washington meeting of the American Medical Association several papers on "Psychic and Emotional Factors in Disease" were read in the medical section, indicating that the internists are realizing the need of a practical medical psychology.

That the symptoms, course and prognosis of disease are profoundly influenced by mental factors is an observation as old as medicine, but not always appreciated.

Stumbling blocks in the practice of medicine are in unintelligent patients, lack of understanding, hence poor cooperation, while in both intelligent and unintelligent people the disease picture is greatly influenced by intellectual and emotional factors.

The emotional (or affective) condition exerts in disease an influence far in excess of any intellectual factor.

While we have no exact knowledge as to the cause of the emotions which are experienced subjectively only, we feel pretty sure that they are connected with physical processes and that differences in affectivity in different people depend upon a difference in constitutional equipment.

Medical psychology is paying more and more attention to constitution, physical and mental, and its effect upon reaction to morbid influences.

We know that the affective condition exerts a profound influence upon attitude, expression and speech, as well as upon the cardiovascular and glandular systems and upon metabolism, while conversely the emotional state is strongly affected by disease, as shown in the anxiety of heart disease, depression and irritability in digestive troubles, euphoria in phthisis, etc.

On the psychological side, we are convinced of the importance of the emotional condition existing at the time in forming, fixing and linking together our conceptions and in determining their relation to the field of consciousness.

The facilitating and inhibiting influence of the emotions upon the content of consciousness may lead to certain elements of this content being bound together through a corresponding emotional tone into what has been called a "complex." Such a complex even if it is not actually in the field of consciousness, nevertheless remains a permanent unit in the psychic dynamics and may be awakened and brought again into consciousness by anything which arouses the emotional tone characteristic of it.

Whether or not we accept Freud's theory of an "unconscious" sphere wherein are contained certain suppressed mental elements and complexes, which though they cannot be reproduced voluntarily, nevertheless profoundly influence the psyche

and also can translate themselves into physical symptoms ("conversion hysteria"), is immaterial for our present purpose.

We know that in a sick person an injudicious communication or any circumstance producing a painful emotional state may bring into consciousness a train of ideas which can unfavorably influence the progress of the case. Also we are aware that violent emotions as rage and fear may cause a sudden paralysis of a damaged heart; a rise of blood pressure which may produce a fatal apoplexy in an arteriosclerotic; inhibition of gastrointestinal secretions; increased peristalsis, which may manifest itself as diarrhea; involuntary discharge of urine and feces; and exceptionally an intestinal spasm which may be severe enough to suggest an organic obstruction which must be attacked surgically. It is also conceivable that chronic and recurrent emotional disturbances may set up vicious circles which in time result in actual organic change.

Therefore the physician should not only study the physical constitution of his patient, but should attempt also some estimate of his probable emotional reactivity.

To this end a knowledge of his past activities, his family, social and business relationships, may well contribute in deciding not only whether he has sufficient intelligence and good will to cooperate, but also in estimating how he can best be managed, what should be avoided, etc.

The proper control of the emotions cannot but improve the prognosis.

This is to be attempted not only through dietetic, hygienic, physical and medicinal measures, but also by tactful avoidance, kindly reassurance, and throughout everything an atmosphere of favorable suggestion.

Charles Lewis Allen,
Los Angeles.

Obstetrics

Heart Disease in Pregnancy—Heart disease is and always has been a serious malady; taking many lives and crippling others. In the United States statistics indicate an increase in mortality rate in cardiac diseases. It may almost be said that in late years the general public has developed a cardiophobia. It is therefore pleasing to find in Doctor Cabot's book, "Facts on the Heart," the following statement: "The first, and in some ways the most important point of all is to know most 'heart disease' is imaginary."

In contrast to this statement is the quotation from "The Beloved Physician" by Wilson, a book which gives the life history of Dr. James Mackenzie, the great heart specialist of London: "The girl was dead. She died of sudden heart failure. Her child remained unborn in her womb. James Mackenzie, as he turned to break the news of her death to her husband, tasted the bitterest anguish which any doctor can experience."

"One hour later in his consulting room, as he paced the floor in the deep silence of the small hours, the full horror of this calamity was revealed to him. The question sprang to his lips, would this death have occurred if I had a better knowledge of heart afflictions?" It was thus Mackenzie became a heart specialist.

As obstetricians, we cannot all become heart specialists, but we should ever be ready to recognize danger signals. A. Leyland Robinson, M. D., London, in the *Lancet* of January 22, 1927, suggests the following treatment for cardiac complications of pregnancy:

"(*a*) *Without Heart Failure*—After full investigation of the heart and full allowance for the various cardiac loads, the pregnancy may be permitted to continue so long as the cardiologist estimates the reserve as satisfactory.

"(*b*) *With Heart Failure*—Unfortunately, a patient may become pregnant when her heart is imperfectly compensated, or she may develop heart failure before seeking advice, or even when under treatment. Under these circumstances, the obstetrician is often advised to terminate the pregnancy forthwith.

"On the contrary, every effort must be made to restore the compensation of the heart before the termination of the pregnancy is decided upon.

"(*c*) *Control of Repeated Pregnancies*—Although it may be fairly advanced that the first pregnancy and labor produce the maximum muscular strain, and that subsequent labors are frequently short and easy, yet repeated pregnancies should be forbidden to all patients who have any heart lesion. In any event, adequate spacing of the children is essential in order that the heart may be given ample time to recover from the strain of one pregnancy before being exposed to the effects of another.

"(*d*) *Mode of Delivery*—If the cardiac reserve is sufficient to enable the patient to play games and lead an active life when not pregnant—*i. e.*, almost perfect—normal delivery at full term may be safely allowed; at the same time, the induction of premature labor and the use of forceps are always useful procedures, as they mean less work for the expelling muscles and, consequently, less strain on the heart. For cases in which the cardiac reserve is seriously reduced cesarean section is probably the least risky mode of delivery. This operation has many advantages."

In our own practice we aim to follow a program similar to the above, and we believe the obstetrician should also have, associated in some cases, a skilled cardiologist.

Recently a multipara came under our observation—eight months pregnant, mitral lesion, pulse 100 to 140, B. P. 135.80, dyspnea, orthopnea, slight edema of ankles, some passive congestion of lungs with cough. Under treatment with close observation, rest in bed, ice bag to heart and digafolin, the heart showed some compensation. Patient went into labor after a four weeks treatment. Ethylene was given and forceps applied. After a short labor, and with treatment continued, the patient went home in two weeks, with greater compensation. The first thought was cesarian section, but with the patient under observation,

she was permitted to continue her pregnancy. Evidently, her cardiac reserve was increased.

In the out-patient obstetrical department of the College of Medical Evangelists, we often come in contact with organic heart lesions. We have found that nearly every woman with such lesions can carry through pregnancy successfully; but should have good prenatal care, and this may include hospitalization under close observation.

P. Martin Keller,
Los Angeles.

Dermatology

Treatment of Chronic Urticaria—One of the most trying and vexatious therapeutic problems that may come up before a clinician is the clinical control of chronic urticaria.

This condition, common and simple as it may seem, frequently proves to be extremely distressing due to its chronicity, persistence and acute suffering during the attacks. The crucial point of the problem is that urticaria, etiologically considered, is not a definite entity, but merely a symptom which may be produced by a great variety of endogenic and ectogenic factors, not uncommonly defying the most skillful and intensive efforts of detection.

The initial glowing hopes that the problem of urticaria will be solved in the realm of protein sensitization through anaphylactic skin tests failed to materialize. Subsequent laboratory studies showed that not more than 66 per cent of all urticarias give positive anaphylactic tests. On the other hand clinical observations have revealed that in many cases in which the suspected offending proteids were eliminated from the food, the results were negative. It was pointed out and demonstrated by Duke that urticaria may be induced not only by physical agents such as heat and cold, but also by psychic and emotional factors. These observations have rendered the therapeutic control of urticaria still more difficult and uncertain.

In view of these facts, a new therapeutic agent, alleged to be capable of giving a lasting relief in chronic urticaria, should be acclaimed a godsend and a boon, both to the suffering patient and the harassed clinician.

Such new agent, ephedrin sulphate, has been introduced by Beatrice Kestien [1] of the Dermatologic Clinic of Columbia University.

Ephedrin is an active principle of the Chinese drug ephedra vulgaris. Its pharmacologic action is similar to that of epinephrin. It has a stimulating action on the peripheral vasoconstrictors and is a cardiac accelerant. *It differs from epinephrin in being effective, whether administered hypodermically or orally, in producing a more sustained effect and in its low toxicity.*

Ephedrin has been used as an astringent for mucous membranes, to stimulate circulation and elevate the blood pressure in Addison's disease, and in other forms of chronic hypotension.

It is well known that urticarial wheals disappear temporarily after a hypodermic injection of epinephrin. This fact suggested that a longer remission might be obtained by the slower and more sustained action of ephedrin administered orally.

The oral dose of ephedrin sulphate varies from 50 to 125 mgms. in capsules 25 mgms. each or in 3 per cent solution every two to six hours. Harmful results due to ephedrin were not observed.

Ephedrin sulphate was administered orally to seventeen patients suffering with chronic urticaria and angioneurotic edema with complete relief in nine and improvement in four cases.

In spite of the small number of cases reported the results are so striking and promising that the report by Doctor Kestien can be considered a distinct contribution to the solution of the urticarial problem.

Moses Scholtz,
Los Angeles.

1. B. Kestien: Arch. Dermat. & Syph., August, 1927, p. 189.

United States Public Health Service — Smoke Studies—Smoke in the atmosphere, especially when combined with mist to produce fog, brings about a very great lowering of the daylight At the present time a great loss of light results in large cities from the effect of smoke. A study of the decrease of light by smoke, now being made by the United States Public Health Service in New York City, at the lower end of Manhattan Island where the air is very smoky, showed an average loss of daylight due to smoke in January of 1927, on sunny days, of 42 per cent at 8 o'clock in the morning, and of 18 per cent at noon. These amounts of loss of daylight decreased, as the year advanced, to 33 per cent at 8 a. m., and 6 per cent at noon, in June. These figures are for clear sunny days; for foggy days the loss is much greater. The loss of light due to smoke in the atmosphere is greatest early in the morning or late in the afternoon, and least at noon. As would be expected, the loss of light is greater in the winter than in the summer. The figures given show the great importance of getting rid of smoke in our great cities. Loss of daylight or the light rays is not the only evil resulting from the presence of smoke in the atmosphere; smoke also cuts out to a much greater extent the ultra-violet rays which are so necessary for good health.

Mushroom Poisoning Yields to Serum Treatment—Chicago—Gustatory connoisseurs addicted to the consumption of the toothsome mushroom have reason to feel a little more secure in their enjoyment of their favorite steak accompaniment.

What appears to be a successful serum for mushroom poisoning has been developed by Dr. Dujarric de la Riviere, professor at the Pasteur Institute in Paris, according to a report just made to the American Medical Association by its French correspondent.

The French doctor prepared his serum by inoculating a horse with increasing doses of four highly toxic mushrooms and then used it to treat laboratory animals, obtaining highly successful results.

When called to the assistance of a family in which three people had been poisoned at the same time, it happened that he was able to secure only two ampoules of the serum from the Pasteur Institute. These he administered to the two patients who appeared to be most seriously stricken, with the result that the two who received the serum injections recovered while the one who did not, died.

When a report of his research was presented to the Congress of Hygiene, that body passed a resolution recommending that supplies of the new serum be kept in hospitals and so far as possible in the town halls of villages for the accommodation of physicians.—*Bull. Wayne Co. Med. Soc.*

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

PERCY T. PHILLIPS.....President
WILLIAM H. KIGER.....President-Elect
T. HENSHAW KELLY.....Vice-President
EMMA W. POPE.....Secretary-Editor

OFFICIAL NOTICES

Fifty-Seventh Annual Session

The 1928 meeting of the California Medical Association will be held at Sacramento, April 30 to May 3 inclusive. So closely associated is Sacramento with the beginning of medical history in California that it is particularly fitting that the California Medical Association should occasionally make a pilgrimage to the place of its birth. An account of the organization at Sacramento of the Medical Society of the state of California in 1856 will appear in a later issue.

The city of Sacramento must be given the credit of having established the first Board of Health in California on March 22, 1862. Drs. F. W. Hatch, J. F. Montgomery, T. M. Logan, and Ira E. Oatman were its members. The duties and powers of the board and the duties of physicians and others were defined. This was the second City Board of Health in the United States, the first having been organized in the city of Boston a few years previously.

Among present members who formerly practiced in Sacramento are: Thomas B. Huntington, a pioneer of antiseptic surgery: D'Arcy Power, James H. O'Connor, Albert McKee, Mark Woolsey, Charles D. McGettigan.

Members who were born in Sacramento are: Wallace I. Terry, Stanley Stillman, George Ogden, Charles B. Pinkham, Edward Twitchell, and Gerald G. Fitzgibbon.

Official Headquarters

The Hotel Senator will be official headquarters. Those who plan to attend the meeting should make reservation early.

Meeting of the Council

The next meeting of the Council of the California Medical Association will be held in the English room of the Palace Hotel, San Francisco, on March 24, 1928.

Amendments to the Constitution

Second Printing

Enabling Act

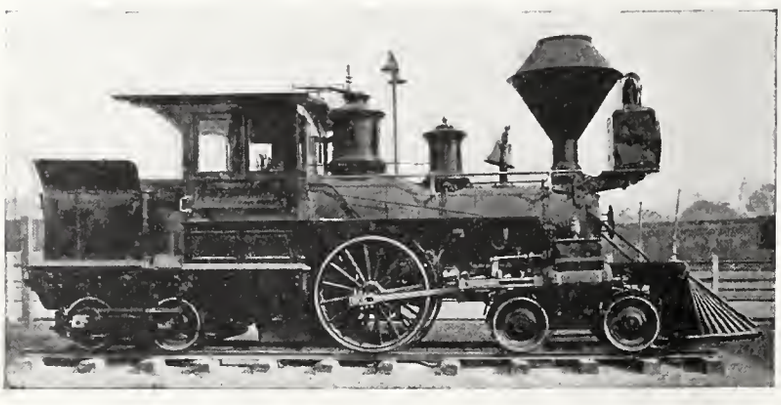
Amend Article XII of the Constitution relating to Amendments by striking out the existing article and substituting in lieu thereof, the following:

The House of Delegates at any annual meeting including the meeting at which this amendment is adopted may amend any article of this constitution by a two-thirds vote of the delegates present and acting; provided that any amendment to the constitution is submitted in writing and laid on the table for twenty-four hours previous to being considered and acted upon.

Article XII

Incorporation

To aid in carrying out the object of the Association, the House of Delegates at any session of any regular or special meeting thereof, may by a two-thirds vote of the members thereof present and acting, authorize, empower and direct the Council to cause the formation and organization of a non-profit corporation under the laws of the state of California, without capital stock, with such incorporators, name, purposes, objects, principal place of business, term, number of directors and directors to serve for the first year and until their successors are elected, and with such provisions regarding the voting power and property rights and interests of the members of the corporation and such further provisions in the Articles of Incorporation thereof, and with By-Laws and composed of such members representing this Association as the Council shall prescribe, fix and determine. The House of Delegates may at its option in connection with the granting and giving of such authority, power and direction to the Council, prescribe, fix and determine any or all of such matters pertaining to the said corporation, its Articles of Incorporation, and any provision thereof, By-Laws and membership, and its action thereof shall bind the Council; and the House of Delegates at any session of any regular or special meeting thereof may by a two-thirds vote of the members thereof present and acting, authorize, empower and direct the Council to grant, assign, transfer, convey and deliver to the said corporation upon the formation thereof without any consideration therefor, any property, real or personal, of the Association, which authorization, power and direction may be given prior or subsequent to the formation and organization of said corporation.



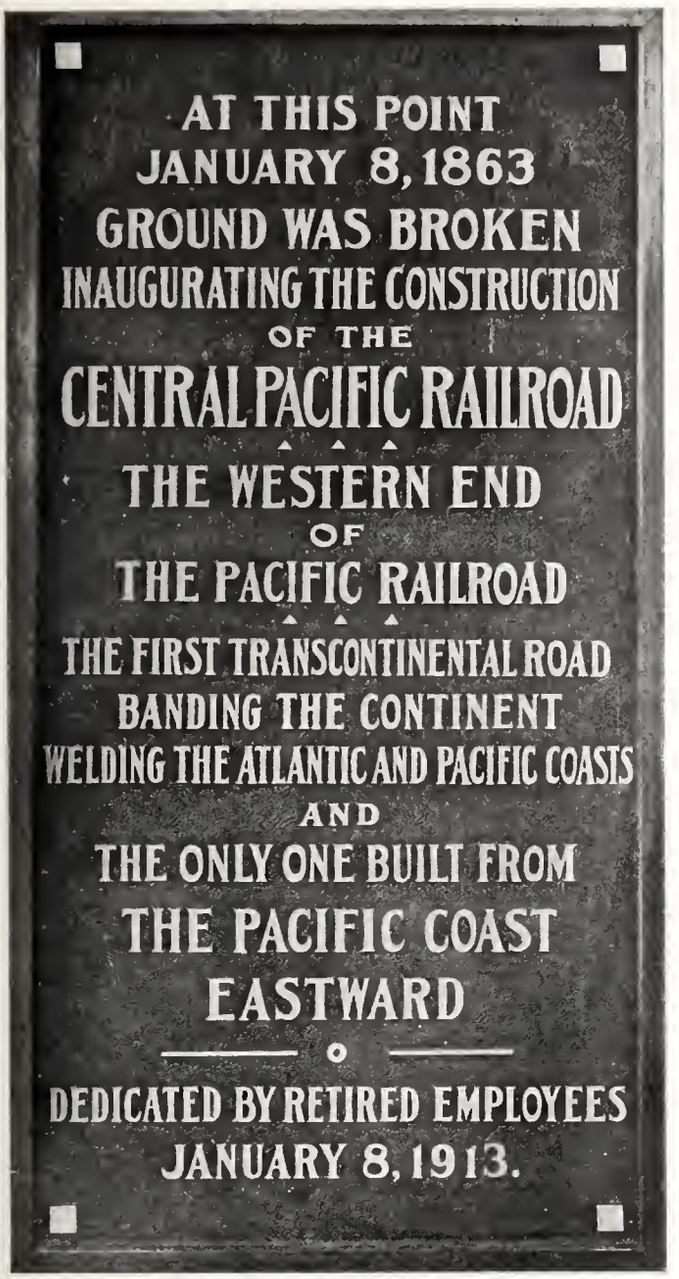
Old locomotive, Engine No. 1. First on Transcontinental Railroad. Engineer Lonergan is still living. (On exhibit at Sacramento.)

Correction of Error in December Journal

William H. Bucher, M. D., of Olive View Sanatorium, was erroneously reported deceased, in the December issue of CALIFORNIA AND WESTERN MEDICINE. William H. Bucher, D. D. S., was the man who died at the French Hospital in Los Angeles, on September 11, 1927.

The use of the title Dr in place of the proper degrees, the identity of the names and of the place of residence are doubtless responsible for this error.

A letter from Doctor Bucher of Olive View Sanatorium states the announcement is a mistake and requests correction, which we are glad to make.



Tablet erected at First and K Streets, Sacramento, to mark terminus of first Transcontinental Railroad.

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The December meeting of the Alameda County Medical Association was held at the Ethel Moore Memorial Building, Monday, December 19, 1927.

Doctor Royer discussed Korsakoff's disease, presenting cases to demonstrate the outstanding symptoms of loss of memory with memory gaps filled with wide confabulation. Doctor Royer pointed out that Korsakoff's syndrome may occur with or without multiple neuritis and that the pathology is chiefly a diffuse involvement of the cerebral cortex with changes which are chiefly in the bodies of the cells with intact nuclei. Doctor Royer emphasized the importance of elimination and careful feeding in the treatment, pointing out that practical starvation often exists in these patients.

Dr. N. Austin Cary read a paper on "Some Interesting Foot Lesions, with Special Reference to Osteitis." He reviewed the pathology of these conditions, including Paget's disease, Perthe's disease, Madelung's disease, Kohler's disease, and hypertrophic osteoarthropathies, illustrating his discussion with case reports and urging the importance of early diagnosis in order that correct treatment might be started promptly.

Following Doctor Cary's paper Miss Frances Stern, chief of the Food Clinic of the Boston Dispensary, discussed in some detail the work of that institution. She emphasized the importance of food and diet in the treatment of disease and demonstrated the need for an organization able to translate the doctor's food prescriptions into menus.

There being no business the meeting adjourned.

GERTRUDE MOORE, *Secretary.*

LOS ANGELES COUNTY

The regular meeting of the Los Angeles Obstetrical Society was held on January 10. Drs. A. M. Muchnic and N. Kavinoky presented a case report of congenital atresia of the esophagus, and detailed the origin as a faulty development of the trachea in most instances. The patient died at thirteen days, a week after a gastrostomy. Doctor Kavinoky discussed a possible operative mode of treatment to enclose the lower esophagus and later join the two segments.

Dr. L. G. McNeile discussed resuscitation of the asphyxiated infant. After detailing the various methods that have been used, he expressed his preference for tracheal catheterization combined occasionally with carbon dioxid-oxygen inhalation and tongue traction. Alpha-lobelin has given him satisfactory results. He brought out incidentally that the tracheal catheter was first advocated in 1780 and demonstrated the use of the catheter in a very convincing manner.

Dr. A. J. Scott in discussing the immediate treatment of intracranial hemorrhage noted that hemorrhagic disease probably was the cause of as many cases of intracranial hemorrhage as was traumatic injury. After citing several cases he gave treatment of first, injection of whole blood from a parent; second, lumbar or cisternal puncture; and third, rest with the absolute minimum of handling.

Dr. S. F. Stewart, by invitation, presented his work on sections of the gray rami of the sympathetic nerves in treating spastic paralysis resulting from intracranial injury. He follows the work of Royal and Hunter of Australia, and the results have been most gratifying. His paper was illustrated by moving pictures of patients before and after operating.

The meeting was attended by a larger audience than was any session for the last two years.

WILLIAM B. THOMPSON,
Secretary Obstetrical Section.

ORANGE COUNTY

The thirty-ninth annual meeting and banquet of the Orange County Medical Association was held at the Ebell Club, Santa Ana, at 7 p. m., January 12, 1928, with about eighty persons present.

Following a fine dinner was a program of speaking and musical numbers. Dr. Danforth C. Cowles of Fullerton, retiring president, read a paper, "A Review of 1927." Dr. J. I. Clark of Santa Ana was toastmaster and installed the officers for 1928. Dr. Dexter R. Ball, Santa Ana, who for the past five years has been secretary-treasurer of the Association, will be the president for 1928; Dr. E. J. Steen, Fullerton, vice-president; and Dr. F. Harold Gobar, Fullerton, secretary-treasurer.

Dr. C. D. Ball, father of the president-elect, is the only remaining charter member of the organization. He gave a short talk, recalling characters and incidents of the days past.

Mrs. R. A. Cushman and Dr. G. M. Tralle gave short talks. Rev. George A. Warmer of the First Methodist Church of Santa Ana, gave the main address of the evening on "Hospital Mindedness."

F. HAROLD GOBAR, *Secretary.*

* * *

RIVERSIDE COUNTY

Meeting of the Riverside County Medical Society was called to order in regular session, President Jones presiding. The minutes of the meeting were read and approved as read.

New Business—Doctor Telford of the State Board of Health was present and spoke on the health work of Riverside County and State generally. He commended the program as worked out in Riverside County and urged that the doctors use their influence

to continue this program as closely as possible. Following his talk the subject was discussed by several members, and Dr. W. W. Roblee presented the following resolution:

Resolved, That the Riverside County Medical Society hereby reiterates its opinion previously expressed, that a full-time combined health organization for the city and county of Riverside is most desirable, and we urge that the present plan of cooperation between Riverside County and City, the State Board of Health, and the International Health Board be continued.

This resolution was duly seconded and on vote was adopted and copies of this resolution ordered sent to the mayor of the city of Riverside, the president of the State Board of Health, the Board of Supervisors, and the International Health Board.

Membership—The application of Reynold D. Smith, was voted on and he was unanimously elected to membership in the society.

The name of Howell Babcock, graduate of Jefferson Medical College, year 1915, was submitted for membership. Doctor Babcock came to Riverside from the New York County Medical Society where he has been in practice in New York City for the past six years, holding several clinical positions. Doctor Babcock is now in general practice. Application was recommended by Bon O. Adams, and Will H. Holmes.

Program—The program of the evening consisted of a symposium on the thyroid gland as follows:

Presentation of type cases—W. W. Roblee.

Anatomy and pathology (lantern slides)—Paul E. Simonds.

Differential diagnosis and medical treatment—W. W. Roblee.

Basal metabolism and x-ray treatment—P. F. Thuresson.

Surgical treatment—C. R. Geith.

This symposium was very interesting, and active discussion was participated in by various members.

Buffet supper was served at close of evening.

THOMAS A. CARD, *Secretary.*

SAN BERNARDINO COUNTY

Minutes of the meeting of the San Bernardino County Medical Society, held at the San Bernardino County Hospital, January 3, 1928.

Meeting was called to order by the president at 8:15.

Minutes of the previous meeting were read and approved.

Doctor Moseley reported for the County Hospital committee.

Transfers to Santa Clara County Medical Society were granted to A. W. Donaldson, Lenore D. and C. R. Campbell.

W. M. Chapman and Marcus D. White were admitted to membership in San Bernardino County Society.

The program of the evening was then entered upon:

Appendicitis: Its Complications and Treatment—P. M. Savage. Discussion opened by E. L. Tisinger.

Amebiasis—G. S. Landon. Discussion opened by F. S. Modern.

Supper at 10:30.

There were forty-two present.

Meeting adjourned at 10:50.

E. J. EYTINGE, *Secretary.*

SAN DIEGO COUNTY

The last society dinner of the old year was featured by an excellent discussion on child welfare by members of the local society. The discussion was opened by a carefully thought out paper by Doctor Cordua, director of child hygiene for the city and county of San Diego.

The following is a digest of Doctor Cordua's talk:

Preventive medicine is being sponsored by lay groups because medicine's great battle for the preservation of human life and health is no longer being fought against bacteria; it is being waged against the greatest of all evils—Ignorance.

A superficial study of the causes of death in any community forces the conviction that some time before the critical moment of birth the life of the child has been so beset with the hazards of ignorance, social and economic environment, as to make the ordinary struggle for existence pale into insignificance.

The public has definitely awakened to the fact that there is no more important work than that of providing adequate care for the expectant mother as well as proper environment and living conditions in the home in which the child begins his life.

The ear of the most advanced of the medical profession is attuned to the message of childhood, and it remains for those who consider themselves entitled to speak for the children to put this message into form for the rest of the medical profession to consider. Since the need for child protection in the matter of positive health is recognized we must begin at the moment of conception to prepare the young life for the fullest enjoyment of a good mental and physical inheritance.

Let us then attain this ideal and strive to provide adequate prenatal care for every mother in America. Let us make it our business to see that every child has the food which an all-wise providence has provided. The outstanding fault in breast feeding is its low incidence. Let us demand for the community's children that which the wisest mother demands for her child: *viz.*, proper hygienic surroundings, early instruction in the elements of hygiene and good health and a periodic health evaluation which shall include a complete physical examination, an inventory of the child's health and social habits, and his emotional life.

To provide these essentials for all children is to recognize a wise economy. It is infinitely more expensive to any community to allow children either to die prematurely or to come to adult life ill prepared or maladjusted.

This venture requires teamwork. A cooperative alliance between the medical profession and lay organizations is not only desirable, but is essential to the best interests of all.

The discussion of this admirable presentation was entered into at some length by Doctor Wier from the standpoint of the obstetrician, Doctor Thornton as representing the pediatrician, Doctor Andrews from the standpoint of the psychiatrist. Doctor Welpton from the viewpoint of the clubwoman, stated during her remarks that the program of the associated women's clubs called for one meeting a month on public welfare. Dr. Will Potter discussed from the standpoint of the general practitioner.

The December meeting of the Mercy Hospital staff was treated to an excellent program on heart conditions, illustrated by moving pictures of the action of the organ. Dr. Harry Spiro of San Francisco, who gave the talk, will be gladly welcomed again to San Diego when he can find it convenient to call.

On Saturday, January 7, the society was the guest of the Scripps Metabolic Clinic, whose directors, Colonel Milton A. McRae and Mr. J. C. Harper, tendered a dinner at the Casa de Manana in honor of the clinic's guest, Doctor Sturgis of Michigan University. After the dinner the guests reassembled in the auditorium of the La Jolla Women's Club where Doctor Sturgis gave a clear-cut talk on our latest knowledge on pernicious anemia as worked out in his laboratories at Ann Arbor. His paper will appear in a future issue of CALIFORNIA AND WESTERN MEDICINE.

ROBERT POLLOCK.

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held January 5, 1928, in the hall of the Medico-Dental Club, 242 North Sutter Street. In the absence of the president, Doctor McGurk, first

vice-president, presided. The meeting was called to order at 8:45 p. m. Thirty-three were in attendance. Those present were: Drs. S. R. Arthur, J. W. Barnes, E. L. Blackmun, J. F. Blinn, H. S. Chapman, Fred J. Conzelmann, J. D. Dameron, J. F. Doughty, Linwood Dozier, C. F. English, William Friedberger, E. Frost, Percy B. Gallegos, Minerva Goodman, R. R. Hammond, Sam Hanson, Charles D. Holliger, J. P. Hull, H. E. Kaplan, Boyd M. Krout, G. H. La Berge, R. T. McGurk, W. T. McNeil, F. G. Maggs, F. S. Marnell, F. J. O'Donnell, George H. Sanderson, L. E. Tretheway, A. L. Van Meter, G. J. Vischi, and B. F Walker. Dr. O. D. Hamlin of Oakland and Mr. Hartley F. Peart, attorney for the California Medical Association, guests and speakers of the evening. Visitors: Mr. M. Shaughnessey and Mr. E. Arthur.

The minutes of the previous meeting were read and approved.

The committee on admissions reported favorably on the applications of Drs. Boyd M. Krout and Dietrich V. Wiebe. In accordance with the provisions of the Constitution the Chair declared Doctors Krout and Wiebe duly elected active members of this society.

Communications from the president, Dr. J. J. Sippy, Dr. Linwood Dozier, Dr. Ernest C. Griner, and Dr. H. E. Kaplan were read and ordered filed.

Drs. H. E. Kaplan, L. Dozier, G. H. Sanderson, C. D. Holliger, and Dewey R. Powell presented the following resolution as an amendment to the Constitution:

Resolved, That the officers of the San Joaquin County Medical Society be elected by a popular ballot;

That the president and vice-president serve, ex-officio, as members of all standing committees;

That the secretary of the society be a member of the board of directors;

That the nominations take place one month prior to the election, and that the ballots be sent to all members of the society so that they can vote whether present or absent at our annual election.

Moved by Doctor Walker and seconded that the proposed amendment be voted on at the next regular meeting of the society, as provided by the Constitution. The motion carried.

Doctor McGurk made a few brief remarks relative to the work of the Legal Committee, of which he is the chairman.

The president presented Doctor Hamlin of Oakland, who gave a splendid talk on the subject, "County Hospitals of the State of California." He emphasized the need of organizing an efficient social service system, which will in most instances be sufficient to eliminate pay patients from county hospitals. For every patient admitted to a county hospital, whether he pays or not, increases the taxes. Show the taxpayers that pay patients in the county hospitals are increasing the cost and they will be ready to regulate admissions to county hospitals. When in doubt about a pay or non-pay patient, admit him but do not charge him.

Mr. Hartley F. Peart, attorney, followed Doctor Hamlin and gave a splendid talk on the legal problems involved in the conducting of private and county hospitals. The practice of medicine involves many problems; the invasion of cultism is a serious one, and the service clubs, insurance companies, industrial medicine pay clinics, health centers, free tuberculosis hospitals, hospitals for crippled children, as well as county hospitals tend to eliminate the general practitioner, lessen his income and have a trend toward state-controlled medicine. To adjust all the various problems in medicine we must get a united thought of the medical profession. It must be accomplished through the efforts of our associations: county, state, and national. Through the unifying power of our associations we will become conscious of our common interests and above all conscious that, while there is endless variety and color and interest in our profession, there is but one interest in our association and that one interest is to move as a united body to accomplish life's greatest ends in medicine. The speaker suggested that carefully planned publicity and education of the public was one way to accomplish our aims. Legislation must be carefully guarded. The question of state medicine and hospitals is economic, political, and scientific. A lively discussion followed in which many of the members participated, and many questions were asked and answered by the speakers.

Doctor Doughty moved that the Legal Committee be encouraged to continue its good work with the advice of the state council so that its aims may be accomplished. The motion was seconded and carried.

Moved by Doctor Dozier and seconded that the society extend a rising vote of thanks to the speakers of the evening. Motion carried unanimously.

There being no further business the Chair declared the meeting adjourned at 11:45 p. m.

FRED J. CONZELMANN, *Secretary.*

SANTA BARBARA COUNTY

The annual meeting of the Santa Barbara County Medical Society was held at the University Club on January 9, 1928, with President H. E. Henderson in the chair.

At the banquet preceding the meeting there were present thirty members of the society and three guests.

During the dinner Dr. Rexwald Brown presented to the society the following resolution, which was signed by all the members present, and copies of which were to be forwarded to Senators Johnson and Shortridge:

We, the members of the Santa Barbara County Medical Society, do sincerely appeal to you to assist in revising the Revenue Act, which as interpreted by the Commission of Internal Revenue, places on our, and the shoulders of the entire medical profession of the United States, a discriminatory tax.

We appeal for relief from discrimination with respect to the deduction of traveling expenses to medical meetings. The relief has been granted to other professions, and we are unable to understand why the medical profession is subject to the seeming injustice.

Doctor Profant then rendered several songs which were greatly enjoyed by all present, and also led the society in singing a few numbers.

At the conclusion of the dinner Dr. Van Paing introduced Dr. Ramon Ostaja, who spoke on telepathy, hypnosis, levitation and self-induced hypnotic states. He demonstrated mental telepathy by discovering a hidden pencil and demonstrated a cataleptic state, during the stages of which pulse readings were made.

The speaker of the evening, Dr. Edgar Gilcreest of San Francisco, gave a most illuminating discourse on the life and works of Sir William Osler. The talk was extremely interesting and held the audience spellbound for over an hour.

The society then went into executive session. The minutes of the previous meeting were read and approved.

It was moved, seconded and carried, that Dr. Francis J. Hombach and Dr. Clarence T. Roome be admitted into membership.

It was moved, seconded and carried, that the resignations of Doctors Varick, Culler, and L. B. Coblentz be accepted.

It was moved, seconded and carried, that Dr. C. S. Stoddard be made an honorary life member of the Santa Barbara County Medical Society, no further assessments for dues to be made against him.

It was moved, seconded and carried, that Dr. Edgar T. Gilcreest of San Francisco be invited by the Santa Barbara County Medical Society, his expenses to be paid by it, to talk before a joint meeting of the Service Clubs on "Quacks and Quackery."

It was moved, seconded and unanimously carried, that this society go on record as endorsing the whole-

sale inoculation of all children against diphtheria by toxin-antitoxin, and that all means possible be used to dispense this information to the general public.

The following officers were then elected for the ensuing year:

W. D. Sansum, president; N. H. Brush, vice-president; W. H. Eaton, secretary-treasurer; H. G. Hanze, Solvang, first vice-president at large; O. C. Jones, Santa Maria, second vice-president at large. Delegate for two years, H. J. Ullmann. Alternate for two years, F. R. Nuzum.

The president then appointed, first, a program committee consisting of Doctors Brush, Means and Eaton, and, second, Board of Censors consisting of Dr. Samuel Robinson (chairman), Drs. Rex Brown and Ed L. Markthaler.

There being no further business the meeting adjourned.

William H. Eaton, *Secretary.*

SANTA CRUZ COUNTY

The initial meeting of the Santa Cruz County Medical Society for 1928, primarily a business session, was held in Santa Cruz on January 10. The following members were present: Bettencourt, Cowden, Dowling, Eiskamp, Farmer, Fehliman, Gaynor, Hatch, A. L. Phillips, P. T. Phillips, W. A. Phillips, Randall, Sullivan, and Woodard.

It was decided to distribute the fee schedule, adopted by the society last year, in printed form among the members. Plans for scientific programs during 1928 were discussed and Dr. Jesse Farmer was placed in charge of the programs for the year. The next gathering of the society will take place some time in March, and will be under the auspices of the members residing in the San Lorenzo Valley. Ben Lomond will probably be selected as the meeting place, and we are anticipating a delightful evening around the fireplace in that interesting mountain community's library.

Election of officers for the year resulted as follows: Ehler Eiskamp, Watsonville, president; W. E. Fehliman, Santa Cruz, first vice-president; M. Bettencourt, Watsonville, second vice-president; Samuel B. Randall, Santa Cruz, secretary-treasurer. Dr. A. L. Phillips was selected as the society's delegate to the annual state convention, with Dean Woodard as alternate. The following censors were elected: Grant Hatch (1929), Liles (1930), and P. T. Phillips (1931).

Following the business of the evening, Dr. Stanley Dowling, who recently returned from an extensive European tour, entertained the group with interesting reports of his trip, especially emphasizing the economic and surgical aspects of medical practice as found on the continent.

Samuel B. Randall, *Secretary.*

TULARE COUNTY

The regular monthly meeting of the Tulare County Medical Society was held at Motley's Café in Visalia, following dinner at 6:30 p. m. The meeting was called to order by President Zumwalt. Members present were: Doctors Hicks, Newton Miller, Zumwalt, Tourtillott, Ginsburg, Rivin, Seligman, Bond, Gilbert, Campbell, Fowler, Betts, Lipson, Furness, and Kahn. Election of officers was held, and the secretary instructed to cast a white ballot for each of the following: W. W. Tourtillott, president; L. L. Seligman, vice-president; H. G. Campbell, secretary-treasurer; J. R. Hicks, censor. E. R. Zumwalt, delegate. W. W. Tourtillott, alternate.

The secretary was instructed to draw up a resolution of sorrow at the loss of our esteemed member, John Colwell Paine, who died at the Kaweah Hospital in Visalia on Sunday, December 4, of influenzal pneumonia. He had served the society well, both as president and as secretary, for many terms.

Dr. Frank R. Ruff of the Burnett Sanitarium of Fresno was present, and gave us a talk on x-ray pathology illustrated with lantern slides. His talk was more than interesting, and a vote of thanks was tendered Doctor Ruff by the society.

Meeting adjourned at 10 o'clock.

Horace G. Campbell, *Secretary.*

YUBA-SUTTER COUNTY

The Yuba-Sutter Medical Society held a meeting on January 17 at which G. S. Delamere, Marysville, was elected president for the ensuing year.

F. W. Didier, Wheatland, was elected secretary-treasurer.

The credentials of Russell R. Craft (late of Twin Falls, Idaho), were accepted and he was admitted as a member.

A regular meeting will be held on the second Tuesday in each month.

F. W. Didier, *Secretary.*

DEATHS

Adam, George. Died at Los Gatos, December 20, 1927, age 84 years. Graduate of the Jefferson Medical College, Pennsylvania, 1880. Licensed in California, 1887. Doctor Adam was an honorary member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Dahl, William Z. Died at Sacramento, January 11, 1928, age 47 years. Graduate of the College of Physicians and Surgeons, California, 1904. Licensed in California, 1918. Doctor Dahl was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and a Fellow of the American Medical Association.

Fox, Willard H. Died at Los Angeles, age 66 years. Graduate of the Albany Medical College, New York, 1888. Licensed in California, 1895. Doctor Fox was a member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

Friedlander, David. Died at San Francisco, January 8, 1928, age 50 years. Graduate of the Cooper Medical College, California, 1898. Licensed in California, 1898. Doctor Friedlander was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

McClurg, Katherine L. Died at Piedmont, December 28, 1927, age 55 years. Graduate of the Cooper Medical College, California, 1902. Licensed in California, 1902. Doctor McClurg was a member of the Alameda County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Myers, George R. B. Died at Napa, January 13, 1927, age 52 years. Graduate of American Medical Missionary College, Illinois, 1903. Licensed in California, 1910. Doctor Myers was a member of the Napa County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Nicholls, Robert J. Died at Auburn, December 16, 1927, age 47 years. Graduate of the Medical Department of the University of California, 1904. Licensed in California, 1904. Doctor Nicholls was a member of the Placer County Medical Society, the California Medical Association, and the American Medical Association.

Paine, John C. Died at Visalia, December 4, 1927, age 44 years. Graduate of Rush Medical College, Illinois, 1909. Licensed in California, 1910. Doctor Paine was a member of the Tulare County Medical Society, the California Medical Association, and the American Medical Association.

Tuggle, Samuel P. Died at Stockton, December 18, 1927, age 65 years. Graduate of the Medical Depart-

ment of the University of California, 1889. Licensed in California, 1889. Doctor Tuggle was a member of the San Joaquin County Medical Society, the California Medical Association, and the American Medical Association.

OBITUARIES

Henry Francis Wagner

The medical profession suffered a severe loss in the untimely death of Dr. Henry Francis Wagner in the San Francisco Hospital on October 24, 1927. At the time of his death Doctor Wagner was only thirty-one years of age, but he had already given promise of a brilliant career. The cause of his death was an infection contracted during the course of his clinical work to which he devoted much of his time.

The young physician was descended of pioneer stock on both sides. His father, who survives him, had long

Henry Francis Wagner

ago made a name for himself nationally in the field of otolaryngology. His mother was the daughter of the late Hall McAllister.

After graduating from the medical school of the University of California young Wagner attended the University of Pennsylvania where he received the degree of Master of Medical Sciences. At the latter institution he was, as a graduate student, associated with Dr. Chevalier Jackson, the eminent bronchoscopist, and pursued advanced studies and research work in pathology under the direction of Doctor Kolmer.

The next two and a half years he spent in graduate work in Vienna, devoting much time to the intercranial complications of middle-ear infections. Here he worked under such eminent specialists as Professor Ruttin, Stefan Loos, and others.

On returning to California Doctor Wagner became affiliated with the University of California Hospital, and extended his clinical opportunities by joining the staff of the Mary's Help Hospital, at which institution he was visiting surgeon, in charge of the nose, ear, and throat department.

Although only on the threshold of his professional career at the time of his death he had already earned the respect and confidence of some of the most eminent specialists in his field. Quite as significant, however, was the host of personal friends he made both within and without the ranks of his chosen profession. His genial, kindly manner and ready sympathy made friends for him everywhere but especially endeared him to children, who quickly attached themselves to him, and to the needy poor to whom he gave generously of his skill.

Even in his last moments the engaging personality that played so large and characteristic a part in his life, did not desert him. After the onset of the angina, realizing that death was inevitable—and unable to use his voice—he wrote many notes to those about him. In one of these he expressed regret that he must die without giving to his patients the advantages of his twelve years of special training.

In this physical and mental agony his face courageously again and again flashed that honest cheery smile that had instantly and enduringly endeared him to all.

To a nurse who bid him good-night on the last evening with "I will see you in the morning, Doctor," he smiled and truly wrote "I will not be here in the morning," and before morning Dr. Henry Francis Wagner had met death like the brave young soldier he was.

Wallace Alvin Briggs

In the death of Dr. Wallace Alvin Briggs his family, his community and the entire medical profession suffered a loss no one can estimate. To have known this noble man and his estimable wife was a rare privilege and is a sacred memory. Their home was hospitable, without pretense or patronage.

Doctor Briggs was, first of all, a gentleman with a helping hand and a responsive heart whose conscience, with his sense of right and justice, was his law of action.

In medicine, for which he did much both officially and professionally, he was both a pioneer and a connoisseur, always ready to supply what appeared to be lacking in material and technique and prompt to test all remedies that promised relief of suffering, but safely conservative in final approval and adoption of any measure.

He was strong in his convictions, positive in his statements, yet always tolerant and open to reason. Courageous without egotism, genial and confidential without pretense or sophistry. Modest to the point of obscuring his own personality in his desire and effort to support and strengthen a brother physician.

Among many gracious acts of Doctor Briggs our members gratefully remember that in 1895 it was his firm stand in favor of the immediate use of antidiphtheritic serum, against a strong public sentiment, which saved the life of a beautiful nine-year-old girl. This, by the way was, we believe, the first time this great life saver was used in Yolo County.

It is the good fortune of those of us who still remain, to have the life, the works and the example of this modest benefactor as our heritage and inspiration. We mourn with all who knew and loved this benevolent man.

"A kind, true heart, a spirit high,
That could not fear and would not bow
Were written in his manly eye
And on his manly brow.

He kept his honesty and truth,
His independent tongue and pen,
And moved in manhood as in youth
Pride of his fellow men."

To Doctor Briggs' relatives we tender our affectionate sympathy.

Yolo-Colusa Medical Society.
Committee: H. D. Lawhead.
Fred R. Fairchild.

Clifford Hugh Brooks

Resolutions upon the death of Clifford Hugh Brooks, M. D., passed by the Orange County Medical Society at called session, December 6, 1927:

Whereas, In the infinite mercy of Almighty God it has pleased Him to remove from our midst a friend and coworker, in the person of Dr. Clifford Hugh Brooks. Wherefore, we assemble together at this hour to honor his memory and worth, while submitting ourselves to the dispensation of Divine Providence we desire to give expression of our sincere grief in the loss of a beloved associate and to pay our tribute of affection and esteem to one so deserving of our highest praise and commendation.

In his many years of successful practice Doctor Brooks exemplified the highest ethics of his profession, and his influence upon all with whom he came in contact will long endure. At the bedside, whether

among friends or strangers, his kindly and genial disposition won for him the esteem of all.

When overtaken by illness in the active discharge of his chosen line of service to humanity he patiently submitted to his fate with a cheerful spirit until the end. For him there is no more endurance or suffering, but to the bereft family and friends, who mourn his going we offer the condolence of those who partake of a full share in the grief of separation.

Doctor Brooks' death is a great loss to the profession; therefore be it

Resolved, That the Orange County Medical Society express its realization of the loss that our society has sustained in the death of our beloved coworker and esteemed fellow citizen and our personal friend.

Resolved, That we extend to his wife and family our sincere sympathy.

Resolved, That these resolutions be spread upon the minutes of our Association and a copy presented to the family, also a copy be furnished the press.

NEVADA STATE MEDICAL ASSOCIATION

W. M. EDWARDS.....President
G. F. SMITH.....First Vice-President
G. W. GREEN.....Second Vice-President
HORACE J. BROWN.....Secretary-Treasurer
R. P. ROANTREE, D. A. TURNER, S. K. MORRISON
.....Trustees

NEWS ITEMS

On January 10, the Elko County Medical Society held its annual dinner and election of officers for 1928 at the Mayar Hotel, Elko. The following officers were elected: R. P. Roantree, president; W. A. Shaw, vice-president; John E. Worden, secretary-treasurer; C. W. Eastman, censor. It was voted to invite at two to four meetings during the year some distinguished outside physicians to make addresses before the society.

The staff of the Elko General Hospital at a recent meeting elected the following as officers for 1928: C. E. Secor, chief of staff; John E. Worden, vice of staff; W. A. Shaw, secretary. The staff voted to request the county commissioners to build a nurses' home so that rooms now occupied by nurses in the hospital may be available for patients.

UTAH STATE MEDICAL ASSOCIATION

W. R. CALDERWOOD, Salt Lake.....President
E. H. SMITH, Ogden.....President-Elect
FRANK B. STEELE, Salt Lake.....Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....
.....Associate Editor for Utah

OFFICIAL NOTICES

Goiter Survey Is Partly Done—Eighty per cent of the school children of the state, or 110,000 children, have been examined in a survey of the goiter situation in Utah, or about 25 per cent of the total population.

The survey was conducted under the direction of Dr. T. B. Beatty, state health commissioner, and was made by Dr. James Wallace, epidemiologist of the board.

As to samples of water for drinking purposes, that from Milford in Beaver County was the only sample found to contain enough iodin, and this water was obtained from wells 450 feet deep.

The report says that "in general there was found to be a higher incidence of thyroid enlargement among those dwelling near mountain ranges, which exist in great abundance in Utah. These localities almost universally obtain their water supply from mountain streams, which carry down snow water that has had little contact with the soil and, consequently, scant opportunity of taking anything out of the soil, even if the soil contained it. Localities farther from the mountains obtain their water to a much greater extent out of the soil through shallow, deep or driven artesian wells. In those districts, especially near the center of a depression between the mountains, the incidence of goiter was found to be very much less.

The percentage of goiter among the children examined in the different school districts of the state ranged from 26.3 per thousand population to 83.5 per thousand.

Eleven Thousand Nine Hundred Twenty-Two Salt Lake School Children Are Immunized Against Diphtheria—Eleven thousand nine hundred twenty-two school children in Salt Lake have been immunized against diphtheria in the campaign launched about a month ago, Dr. W. A. Pettit, city epidemiologist, reported Thursday to G. N. Child, superintendent of schools.

The cost to the Board of Health was 22½ cents a child, a cost considered moderate by the board, the report said.

The campaign is being continued for the benefit of those who have not yet received treatment, clinic being maintained at the Board of Health in the Public Safety Building each Saturday between 9 and 11 o'clock.

The superintendent said that all children who have not been immunized would be urged to appear at the Board of Health at the hours designated.

SOCIETY REPORTS

The Holy Cross Hospital Clinical Association held its last meeting for 1927 at the hospital the evening of December 21. The program consisted of case reports and a series of x-ray plates demonstrating the results gained in gall-bladder conditions by the Graham technique. Doctor Flood presented several interesting pathological specimens. Election of officers for 1928 resulted in the unanimous choice of Dr. Arthur Murphy, president, and Dr. George N. Curtis, secretary. The Association now has a membership of forty-two, and Doctor Curtis is planning some very interesting programs for the ensuing meetings the first of which will be held January 16. All members of the profession are invited to attend these meetings.

The Wasatch Academy resumed its weekly meetings on January 5, 1928, following the holiday vacation. The program consisted of a lecture on gastric resection following a modified Pola technique and using the new mechanical stomach sewing instrument now employed in stomach resections in Europe. The talk was illustrated with lantern slides by Dr. Floyd Hatch. Doctor Le Barge spoke on the differential diagnosis of angina pectoris and coronary thrombosis, and recited a case history of each, showing difference in symptoms, prognosis and course. Doctor Giesy spoke on some of the recent developments in physiotherapy and reported a number of cases with technique employed. Meetings weekly—Thursdays.

DEATH

Stringham, Briant. Dr. Briant Stringham, 74, died at his home at Bountiful, Tuesday, December 13. He was a member of the first graduating class of the University of Utah and had been a practicing physician in the county thirty-five years.

Surviving are his widows, Mrs. Jessie Eldredge Stringham and Mrs. Elvina Smith Stringham, and the following children: Mrs. Delia Sessions, Briant Jr., Jex, Rodney, Golden, Leone, Helen Stringham, Bountiful; Mrs. Lucy S. Taylor, Kaysville; Harvey Stringham, St. Louis; brothers and sisters, Henry, Richard and William Stringham, Bountiful; George Stringham, Moroni; Henry Stringham, Salt Lake; Philip Stringham, Vernal; Mrs. Julia Woolley, Santa Monica, Cal.; Mrs. Philly Grant, Mesa, Ariz.; Mrs. Almeda Johnson, Mrs. Jane Stephenson and Mrs. Emma Stevens, Holden, and Mrs. Teresa Giles, Salt Lake. Funeral services were held in the Bountiful tabernacle.

MISCELLANY

From time to time in this department of California and Western Medicine, appear columns grouped under the following headings: Comment on Current and Recent Articles in this Journal; News; Medical Economics; Readers' Forum; California State Board of Health; and California Board of Medical Examiners. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Popular Lectures at Lane Hall—All interested are cordially invited to be present.

Friday evening, February 10: "Cults, Quacks, and Cures"—Dr. Edgar L. Gilcrcest.

Friday evening, February 24: "Chinese Medicine"—Dr. Emmet Rixford.

Friday evening, March 9: "Protection against Tuberculosis"—Dr. Frederick Eberson.

Friday evening, March 23: "Prevention of Heart Disease"—Dr. William Dock.

Perpetual Gift Made University of California Regents—Announcement of a gift which will amount to $5000 a year, every year, perpetually, for the prevention and cure of infantile paralysis or other diseases of children in California has just been made by President W. W. Campbell. Nearly $10,000 had previously been donated for this same purpose.

The gift was made anonymously by a "Friend of the University," and will be controlled directly by the Hooper Foundation for Medical Research of the University, whose director, Dr. Karl Meyer, has been seeking for some time to establish a bureau for convalescent serum used in fighting infantile paralysis.

In his letter of presentation to President W. W. Campbell, the donor said: "Dr. Karl Meyer explained to me in detail the other day the work that is being done by the Hooper Foundation in connection with infantile paralysis, and told me how much more could be done if about $5000 per year was available for this purpose, therefore I would like to give $5000 per year for this work during my lifetime, and I am also making provision in my will for a fund of $100,000, interest on same, which will amount to about $5000, to be devoted to this work.

"It is my wish that the direct purpose for which the fund shall be used is primarily for the study, prevention and cure of infantile paralysis in California, and that the fund shall not be diverted to other or different purposes, except in case some other serious epidemic threatens the lives of the children of this state. The director of the Hooper Foundation, in consultation with my representative or myself, shall decide to use part or all of the fund for the study, prevention and cure of such other diseases of children.

"It is, of course, my idea that this money shall be used by the Hooper Foundation. It will also be understood that the administration of the fund is to be conducted according to the rules of the university, and that the director of the Foundation shall alone be entrusted to sign the customary requisitions.

"I feel sure that an agreement which embodies the above points will be perfectly acceptable to the university and to the trustees of the Hooper Foundation, and I herewith enclose my check covering the first annual subscription."

Tropical Ills to Be Studied—With the broad purpose of "making the tropics safe for white habitation," one of the greatest scientific research projects ever attempted in San Francisco soon will be under way.

A group of noted medical authorities are organizing an institute of tropical disease and hygiene to wage war against the ills which now prevent the Caucasian race from developing or settling permanently in the lands of the torrid zone.

The institute will be housed in the laboratories of the Hooper Foundation for Medical Research at Third and Parnassus avenues and will be financed by the University of California.

Its program calls for international cooperation with health authorities of tropical nations and for a program of education and research in conjunction with ship surgeons and the public.

Eventually it is planned to build a hospital in the bay district for investigation and treatment of tropical cases.

Steamship and commercial interests are backing the enterprise as an important step in bringing about closer relations between the port of San Francisco and Latin-American nations.

A meeting of the Pacific American Steamship Association last week, presided over by Captain Robert Dollar, passed a resolution indorsing the project.

Dr. Alfred C. Reed, authority on tropical diseases, has resigned the chairmanship of a department in Stanford University to direct the new institute.

Lane Medical Lectures—The next series of Lane Medical Lectures will be given in October, 1928, by Prof. F. d'Herelle, Directeur du Service Bacteriologique du Conseil Sanitaire, Maritime et Quarantinaire at Alexandria, Egypt. The program has not been decided on, but the lectures will probably cover filterable viruses and the bacteriophage.

Bequests to Stanford Medical School—The Medical School has received $500 from Mr. Edward M. Mills for free beds for children; $1000 from Miss Helen E. Cowell for physiotherapy treatments for indigent deserving patients; $100 from a grateful patient, to be used for surgical research; $610.69 from the estate of Mrs. Ann Whitney Sperry, to be used for the benefit of Protestant and Catholic crippled or orphaned children of San Francisco; $2500 from Mr. Roy N. Bishop and $500 from Mr. George T. Cameron as contributions to the Wellington Gregg Fund for the study of nephritis.

Department of Pediatrics—Pediatrics, which so far has been a division of the department of internal medicine, has been made a full department in the Medical School.

Chair of Biology—By the will of the late Dr. Morris Herzstein, one of the prominent physicians of San Francisco, the Stanford University is to receive $100,000 for a chair in biology.

Recent Lectures—On December 3, 1927, Dr. T. Wingate Todd, professor of anatomy of Western Reserve University Medical School, delivered a lecture on "The Study of Human Alimentary Movements."

On December 7, Dr. Corneille Heymans, extraordinary professor of pharmacology of the faculty of medicine of the University of Ghent, spoke on "Contributions to the Physiology and Pharmacology of the Cardio-Inhibitory and Respiratory Centers."

Nineteen Hundred and Twenty-Nine Lane Lectures—Walter Straub, professor of pharmacology at the University of Munich, will give the Lane Medical Lectures in 1929, which course of lectures will probably be given in April. The details of the program have not as yet been determined.

READERS' FORUM

San Francisco, November 14, 1927.

To the Editors:

The editorial "Twenty-Five Years Ago," in Volume XXVII, Number 5, is very interesting.

It is only fair to the memory of Dr. Philip Mills Jones that attention be called to the dominant thought that was in the minds of the editor and the publication committee which supported him in founding the Journal, the accomplishment of which stands probably as the most enduring monument to the usefulness of the Journal. It should be interesting to the younger members of our profession who have never known of the vicissitudes under which the Journal had its development; it may prove of interest to some of the older ones who have perhaps forgotten.

When the Journal made its first appearance in November, 1902, the necessity of cleaning the advertising pages of medical journals of "unethical advertisements" immediately engaged the attention of the editor and his publication committee. The advertising pages of medical journals at that time generally were filled with nostrums and secret preparations which, had they been reviewed editorially in the journal which published them, would have been condemned. A large proportion of the revenues of these journals, however, were derived from these advertisements, and attack on this evil meant a bitter fight, for the great medical journals of the country were all offenders.

Doctor Jones, however, was a fighter, as many still living can attest who have had occasion to be on the opposite side from him in a controversy. He was a fair fighter, but a tenacious fighter. It would take too long to detail the progress of the bitter fight made at this time to clean the advertising pages of medical journals throughout the land, the acrimonious correspondence, and the abuse and villification heaped upon Doctor Jones and his associates. It is largely set forth in the editorial pages in the numbers which comprise Volume II (1903). Success came because the cause was righteous.

Today the fight made by your Journal is largely forgotten; in fact much of the credit for clean advertising pages is proudly claimed by some of the former offenders. This matters little, if the object be attained. It is only fair, however, to Dr. Philip Mills Jones' memory that the facts be reviewed.

Yours very truly,

GEORGE H. EVANS.

TWENTY-FIVE YEARS AGO *

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Volume 1, No. 4, February, 1903

From some editorial notes:

. . . The commercial bodies of San Francisco in joint session passed resolutions early in this month tacitly admitting the presence of bubonic plague in the city, and promising support in the work of eradicating the disease, and rescuing the coast and nation from a threatened calamity. While the action is tardy and, naturally, taken reluctantly, it became absolutely necessary in order to escape the alternative proposed by the Surgeon-General—state quarantine. . . .

. . . Doctor Cheney in his address of welcome last year to the State Society well said: It is undoubtedly good for us to meet together and exchange views. No man knows it all. Each one is able to learn something from his neighbor. . . .

. . . The San Bernardino County Society has completed the necessary arrangements for affiliation with the State Society, and is now in line for protection and progress. Fresno and Riverside counties are also important recent additions. . . .

. . . At the annual meeting of the Kings County Medical Society (Brooklyn, New York), on January 20, Doctor Bartley read a report of the committee on milk inspection that is worthy of attention. It was found that the number of bacteria per cc. of ordinary "grocery store" milk averaged about 10,000,000, while the number per cc. in the milk furnished by dealers complying with their requirements and "certified," could easily be kept below 1500, and in many instances was well below 1000. . . .

. . . It is not proper nor is it ethical for the physician to make use of secret preparations or nostrums in his treatment of the sick. . . .

. . . It is with much pleasure that the journal records the passage of a bill through the Senate, on February 4, granting a pension of $125 a month to the widow of the late Dr. Walter Reed, in special recognition of his eminent services to mankind in discovering the cause as well as the means of preventing transmission and propagation of yellow fever. . . .

. . . The Carnegie Institute (as well as the medical profession) is to be congratulated for undertaking the publication of the Index Medicus. Like many purely scientific publications, it could not be self-supporting, and hence died; that it is to be brought into life once more and the work taken care of by the Carnegie Institute, will be welcome news to many who have sadly felt the loss of this very valuable bibliographic publication. . . .

From the minutes of the San Francisco County Medical Society:

. . . At the regular meeting of the San Francisco County Medical Society, on Tuesday evening, February 10, Dr. George F. Shiels discussed Edebohl's operation for nephritis. . . .

. . . Dr. George Goodfellow read a paper on "Treatment of Gunshot Wounds," particular reference being made to wounds in the abdomen. . . .

. . . Doctor Cooper said that in the Boer war a surgeon who had been shot in the abdomen refused absolutely to take any sort of nourishment tendered him by well-meaning attendants on the field. He had eaten but little for some time before and his stomach was empty. The wound in the abdomen healed rapidly and the connection between the patient's abstinence and recovery was interesting. . . .

. . . Doctor Carpenter read the draft of a letter to be sent to President Roosevelt advocating the appointment of Dr. Chester Rowell, at present State Senator from the Sixteenth District, to membership on the Panama Canal Commission. On motion the letter was accepted as the sense of the society and ordered to be sent to the President. . . .

From the minutes of the California Academy of Medicine:

. . . The regular meeting of the academy was held at the offices of Doctor Sherman on the evening of January 27, Doctor Montgomery in the chair. . . .

. . . Dr. S. J. Hunkin presented a patient showing recovery from operation for tuberculosis of the ankle joint. . . .

. . . Dr. Philip King Brown read a preliminary report on his observations of strongyloides intestinalis and exhibited microscopic specimens of embryotic parasites. . . .

From an article on Hydrotherapy by Dr. George A. Hare, Fresno:

. . . If anyone thinks that hydrotherapy can be safely administered by the unskilled, successfully utilized by the empirical, or be easily comprehended by the superficial physician, we invite him to dispossess his mind of the physiological processes which may be controlled almost at will by the scientific use of heat and cold. . . .

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

From an article on Spinal Anesthesia with Tropacocaine in Genito-Urinary Surgery by Dr. M. Krotoszyner, San Francisco:

. . . My own experience with spinal anesthesia dates back about two years. At that time I witnessed several operations under spinal anesthesia by Doctor Tait, who, with Doctor Caglieri, wrote a remarkable treatise upon the subject. I soon afterward proceeded to experiment with spinal cocainization in some of my old prostatic patients where a general anesthetic appeared to be dangerous on account of heart and kidney complications. . . .

From the minutes of the San Francisco Society of Eye, Ear, Nose and Throat Surgeons:

. . . Dr. Louis C. Deane showed a man aged 62, for whom Dr. H. B. de Marville and he had built a nose from the skin of his forearm. . . .

From the death notices:

. . . Dr. H. H. Warburton, a pioneer physician of the Pacific Coast, died at Santa Clara on the 8th inst. When Doctor Warburton came to this coast there were but three physicians in California, the only other one in San Francisco having been located at the Presidio. . . .

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. Pinkham, M. D.
Secretary of the Board

Board of Medical Examiners Annual Report, 1927—Digest

Comment is made on the necessity of constant vigilance in investigating credentials, specific mention being made of three cases of attempted fraud in securing a license to practice in California, each prior to the date when the Diploma Mill Bill making it a felony to attempt fraud in securing a license became effective.

Applications filed during 1927 were slightly increased over those of the prior year. As usual the larger number of applications were filed by those licensed in other states who sought to practice in California without examination.

A greater number of certificates were issued in 1927 than in the prior year, the increase being both in reciprocity certificates and those issued after written examination. The larger number of reciprocity certificates were issued to those coming from Illinois, with Iowa second and New York third, the total number issued being 321 as against forty-four licentiates of California who sought a license to practice in other states based on their California certificate.

The board restored three revoked certificates placing the holders on probation, thus giving them the right to practice pending good behavior.

The statistics of written examinations showed that the existing California medical schools again maintained a perfect score without a single failure, whereas 82 per cent passed and 17 per cent failed of those graduates of extra state schools who took the California written examination for a physician's and surgeon's certificate. The larger percentage of failures are recorded against graduates of foreign schools, and it is undetermined whether this is due to inferior education or whether it is due to lack of knowledge of the English language.

Thirty-two California licentiates were called before the board for hearings based on charges of unprofessional conduct, the larger portion being based on narcotic violation, and as a result of these hearings eleven certificates were revoked.

Attention was directed to various legislative enactments of interest to the Board of Medical Examiners, some being amendments to the Medical Practice Act, with special attention being drawn to the amendment prohibiting the ambulatory treatment of narcotic addicts. Favorable comment also made on the enactment of the so-called "diploma mill bill" which makes it a felony to attempt fraud in securing a license to practice in California.

The College Incorporation Bill was also mentioned as progressive legislation. It is hoped that this bill will curb the heretofore easy incorporation of so-called "sun down" colleges authorized by the state to issue any kind of a professional degree without exaction of physical equipment, teaching personnel or financial responsibility.

The legal report, both North and South, showed activities in enforcement of the law, forty-three cases having been disposed of in the North and fifty in the South. The policy of the board in suggesting to the trial court the imposition of a suspended sentence rather than a fine we believe has resulted in better enforcement.

Comment is made on the laws and court delays in hearing the appeal filed by Doctors Dyment, Rinaldo, and Young, following the revocation of their license by the board in 1924, our legal department having reported that these cases have not yet been given a place on the calendar of the appellate court, southern district.

Two hundred and seventy-three individuals classed as doctors died during 1927. Of this list 192 were licensed by the Board of Medical Examiners.

According to the Los Angeles *Times* of December 20, Dr. James W. Beggs was held responsible by a coroner's jury for an automobile and street-car crash in which his passenger Petita Romerez was fatally injured.

"Dr." Matthus Blankenberg, self-styled Lord Matthus Blankenberg of the old castle of Blankenberg of Germany, and the present Prince of the Tribe of Isachor of Israel, was recently arrested at Thermal, California, on a charge of violating the Medical Practice Act. It is alleged that he "is an unsuccessful medical practitioner with a large practice, and his Mexican clientele was keeping him and his Ford car in good going order until his death certificates began to come in to Undertaker Casey." His trial is set for January 13.

The San Francisco *Chronicle* of January 5, 1928, relates the resignation of Health Officer C. R. Blake of Richmond and the appointment of Dr. I. O. Church.

Following finding of the body of Mrs. Buckles lying on an operating table in an abandoned physician's office in Oakland, the police made an active search for an individual calling himself Dr. Irwin A. Cole and the search ended at Buffalo, New York, with the arrest of Charles van Dickenson, who will be extradited and returned to Oakland for trial. There is no evidence that Van Dickenson is a graduate of a medical school, and just why he assumed the name of a reputable practitioner in LeRoy, New York, is as yet an unsolved mystery.

Governor C. C. Young today approved a request for extradition from Buffalo, New York, of Charles van Dickenson, alias Cole and Kohn, jointly accused with E. R. Cook with the murder of Mrs. Elizabeth Buckles at Oakland during the performance of an illegal operation on December 20. . . . (San Francisco *Examiner,* January 8, 1928.

George A. Hunt, accused of practicing medicine without a license, was at liberty on $100 bail today. (San Francisco *News,* December 28, 1927.) Hunt de-

clared that he was a graduate of the Chicago College of Naprapathy and had recently turned down a proposition to enter into a partnership with "Doctor Cole." Police declared that Hunt's arrest had no connection with investigation of the death of Mrs. Buckles. (Oakland *Post-Enquirer,* December 27, 1927.)

"Reverend Doctor" Edmund R. Cook, religious cult pastor, held for investigation in connection with an alleged operation which resulted in the death of Mrs. Betty Buckles in the office of Irwin A. Cole of Oakland Wednesday, may be charged with murder. . . . Cook is being held for investigation following information given Oakland police by Mrs. Josephine Cole, wife of "Doctor" Cole, that Cook was present and assisted at the operation. Mrs. Cole denied she had any hand in Mrs. Buckles' death, but admitted having assisted at previous illegal operations. . . . Cook maintained the headquarters of his "First Psychology Church" in the Pacific Building. . . . (San Francisco *Daily News,* December 23, 1927.) Later reports relate Cook was held to answer December 30 on a charge of murder, and bail fixed at $20,000.

Dr. George H. Coulthard, 303 Pacific Avenue, yesterday was found guilty by a jury in Department A of the Superior Court on one of three counts of complaint charging violation of the State Poison Act. Penalty is from six months to six years' imprisonment in either the county jail or the state penitentiary. . . . Prosecution had alleged sale of narcotics on September 8, 12, and 13, the jury found the defendant guilty of sale on the last-named date. . . . (Long Beach *Sun,* January 6, 1928.) Previous mention in "News Items" of November, 1927.

According to press reports, Joan Soto Ibarra on December 9, 1927, pleaded guilty in Corona to violation of the Medical Practice Act and paid a fine of $100. "It is alleged that one of Ibarra's patients, a young Mexican girl of some twenty years of age, was recently confined in the state asylum at Patton as the alleged result of treatments given her by Ibarra."

According to report of Assistant Special Agent Davidson, Conrado Madrigal was recently arrested in Fresno on a charge of violation of the Medical Practice Act, it being related that he had sold simple remedies to Mexicans at exorbitant prices, it being alleged that he buys the medicine from the drug store, takes it out supposedly as a delivery boy, tells the patients that he is a physician and others that he is a druggist, and also is alleged to represent himself as Dr. Porfirio Diaz. On December 16, he pleaded guilty and was given a six months' sentence in the county jail, suspended for six months on condition that he discontinue further violation of the law.

Newspapers recently have been filled with articles relating the arrest of Dr. Charles M. McMillan, reported to be a former practitioner of Texas, who has been indicted by the Grand Jury in Los Angeles County for the murder of Mrs. Amelia Appleby, widow of a wealthy Chicago inventor. The woman's body was found in a sack in San Fernando Valley. There is no one by this name licensed to practice in California. The Federation Bulletin of September, 1922, relates receipt of information from the Medical Examiners of Texas relating said board had "recently revoked the license of Dr. Charles M. McMillan, formerly of Waco, who on November 19, 1920, was indicted for unlawfully selling morphin and on November 24 was found guilty and sentenced to two years in the penitentiary."

In a forceful article on the narcotic evil printed in the San Francisco *Examiner* of January 5, 1928, Annie Laurie related that "Director Frank H. Benson of the new narcotic division of the State Board of Pharmacy is going to travel through California telling people what 'dope' is and who uses and why it is the greatest menace to the youth of the country today. . . . Are we as a state going to be big enough and broad enough and wise enough to make a real stand in this 'dope' business or are we just going to say 'Yes, yes, too bad,' and let it go at that? I wonder, don't you?"

Our attention was recently called to a sign reading: "Dr. G. C. Sheldon, Chiropractor, Eye, Ear, Nose and Throat Trouble, Fallen Arches Treated, Naturopathy."

The records show that on January 6, in the city of Los Angeles, "Dr." A. M. Bensen, sometimes known as M. V. Benson, business manager or director of the Gilbert Thayer Foundation, pleaded guilty to a violation of the Medical Practice Act and paid a fine of $250. Under date of December 21, 1927, the Chief of Police of Whittier, California, related the arrest on a charge of speeding and drunkenness of an individual alleged to be Dr. M. V. Benson, Gilbert Thayer Foundation, Los Angeles, who was taken by the police from a Chevrolet coupé bearing a California license plate under which was the word "physician." "Doctor Benson pleaded guilty to both charges, speeding and drunk, and was fined $50."

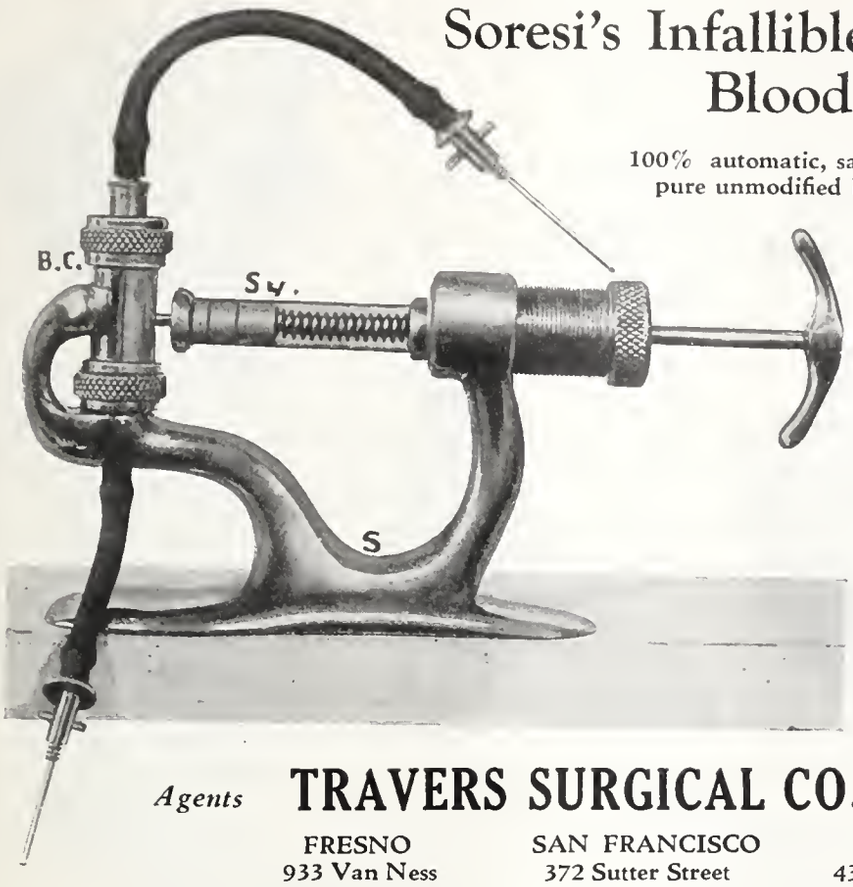
According to report of our investigation department the Gilbert Thayer Health Foundation, northwest corner of Fourth and Broadway, Los Angeles, conducts daily lectures from 10 a. m. to 6 p. m., and prospects are given a card directing them to the third floor where it is claimed they have a staff of physicians, surgeons, osteopaths, chiropractors, optometrists, etc. It is alleged that on arrival the patient is given an examination, for which he is charged $15 and then a course of treatments by some member of the staff, the report showing nine with the degree Doctor of Chiropractic, two with the degree Doctor of Osteopathy, and one optometrist. "A. V. Bensen is the business manager in charge of the Thayer Health Foundation. He is not licensed, but says that he is a graduate of Columbia University, 1917, that he has never applied for a license." Reports relate that on January 6 Bensen pleaded guilty to a violation of the Medical Practice Act and paid a fine of $250.

Following a complaint filed with our office, investigation was made of Guido Vicino, licensed optometrist, who was alleged to have treated a case of gonorrheal ophthalmia, the patient now being reported as in the San Francisco Hospital, facing the possible loss of the sight of one eye.

Dr. K. J. Weberg, chiropractor, living at 1608 North Fairoaks Avenue, was arrested on a possession of liquor charge last night by Sergeant J. L. Nicholl of the Police Vice Squad. A quantity of liquor was confiscated. Doctor Weberg, president of the Pasadena College of Chiropractic, was held in the city jail last night pending furnishing of bail set at $500. (Pasadena *Morning Sun,* December 10, 1927.) Previous entry, "News Items," July, August, and September, 1926.

According to reports, K. Watanabe, an unlicensed Japanese, was on December 28 convicted of second degree manslaughter in Department 5 of the Superior Court of Alameda County in connection with "an abortion performed in the back of his drug store." Previous entry, "News Items," December, 1927.

Report of our investigation department relates that John Paul Whitt, without qualifications, commenced the alleged practice of medicine in San Francisco, and at the time our agent intended placing him under arrest he learned that Whitt was "a deserter from Letterman General Hospital, so instead of charging him under Section 17, he was confined in the city prison, en route to the Presidio." It was learned that Whitt formerly was connected with the out-patient work and was a private in the Medical Corps. Undoubtedly his further activities as a medical practitioner will be somewhat limited by army discipline.



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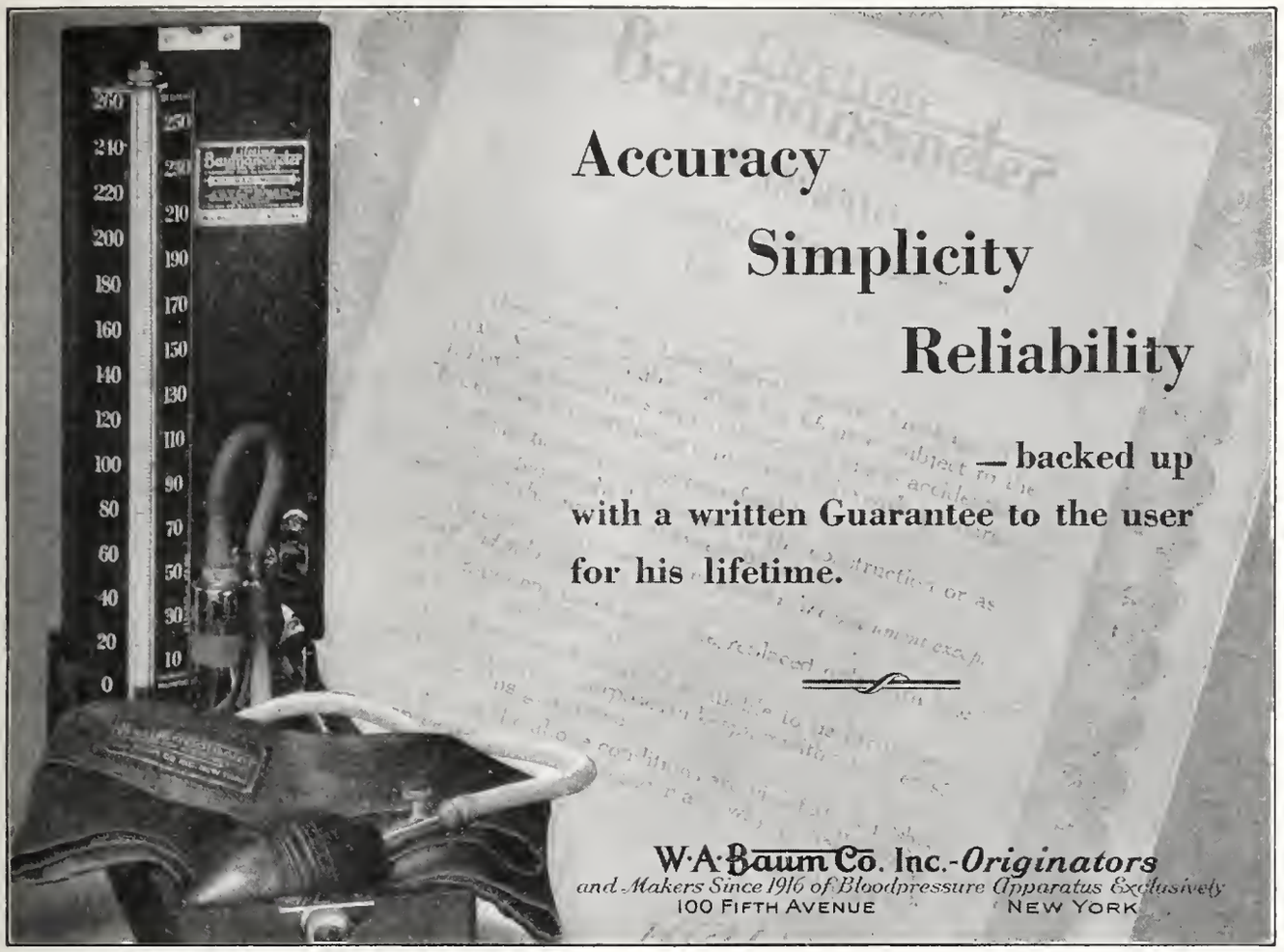

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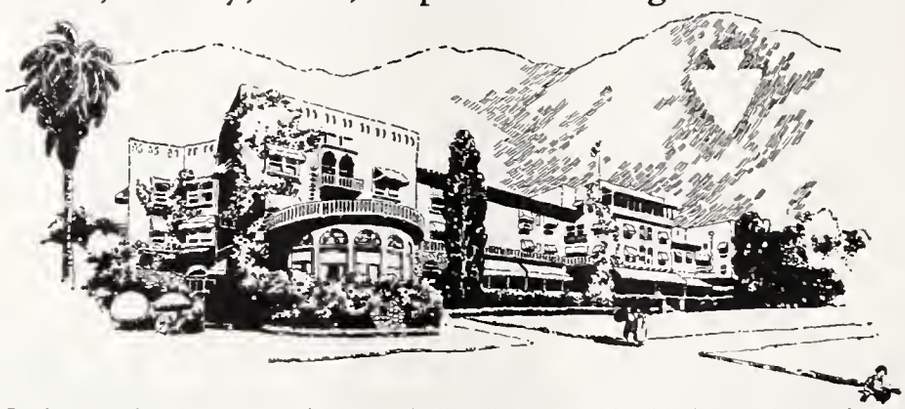

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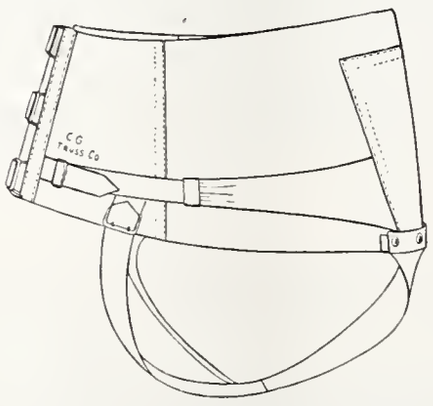

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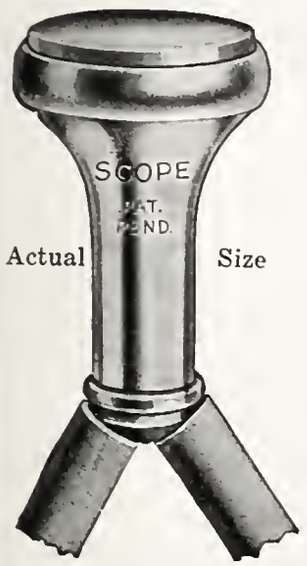

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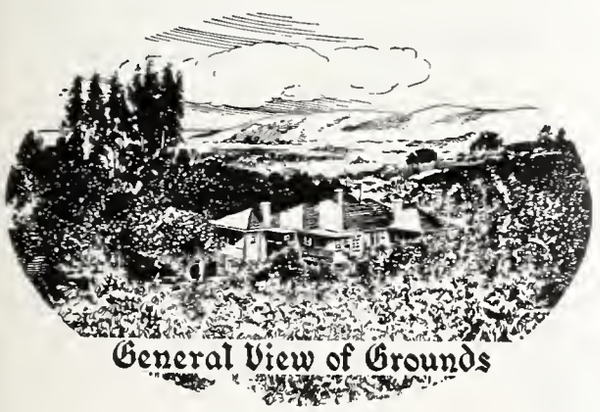

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(From March, 1926, issue of HYGEIA. Published by the American Medical Association.)

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A Child Guidance Council for Great Britain—A clinic for the treatment of difficult, delinquent, or maladjusted children, similar to those financed in the United States by the Commonwealth Fund, is to be established in London by the Child Guidance Council recently formed there to advance the cause of individual case study in child guidance throughout Great Britain. The Commonwealth Fund is financing the new council by an appropriation sufficient to cover its expenses up to the autumn of 1928. A group of well-known medical and social child-welfare workers are to visit America to observe child-guidance schemes in action here, and provision is made for the training of social workers and for a year's services of two psychiatric social workers in existing clinics in England. —United States Department of Labor.

Vocational Training for Cardiac Children—The experiment in vocational training of boys and girls with heart affections, carried on for several years in special classes in two trade schools of New York's public-school system, seems to have been so far successful as to indicate the practicability and value of such training. Of 115 girls discharged during the first two and a half years of the classes, the majority of those who completed the course were recently found to be working at the trade they had learned or a related trade, and were earning higher wages with shorter periods of unemployment than those who entered occupations not related to their trade training.

Only those children are admitted to the classes who in the opinion of the examining physician will probably be able to carry on in industry and who can meet the educational requirements for working papers The majority of the girls at work were able to carry on normal work without losing time on account of ill health. It is suggested that this class of children do not need segregation in special classes if they are kept under adequate medical supervision.—United States Department of Labor.

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Regarding Your Past-Due Account

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If your circumstances have made it impossible for you to pay the amount due, kindly write us promptly to that effect. Our office will then endeavor to extend all possible courtesies.

You appreciate, we are sure, that physicians, like other citizens, must pay their bills promptly. They can only do so, however, when their own clients in turn pay them promptly for such professional services as may have been rendered.

A check to cover your account, which is now considerably overdue, will be appreciated.

Final Notice

In practically all businesses the custom which is generally followed with overdue accounts is to send such to a collecting agency.

Our bookkeeper has nothing in the records of the office to show when you intend to pay the enclosed account. Perhaps the previous statements and reminders may have been overlooked or ignored.

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This collection bureau method is disagreeable to us; and we believe, also to you. By promptly sending your check all this can be avoided.

When an account is sent to the collecting agency that organization takes full charge of it thereafter.

IN THE "Miscellany" section of the September, 1927, issue of CALIFORNIA AND WESTERN MEDICINE, page 398, appeared an article relating to the "collection of fees." Following this publication, numerous orders for printing the series of gum stickers and notices as shown in the article were received by us. We therefore concluded to stock them.

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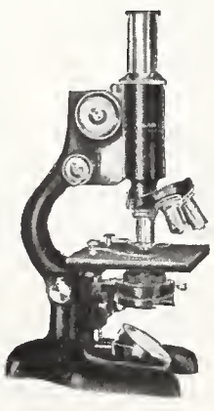

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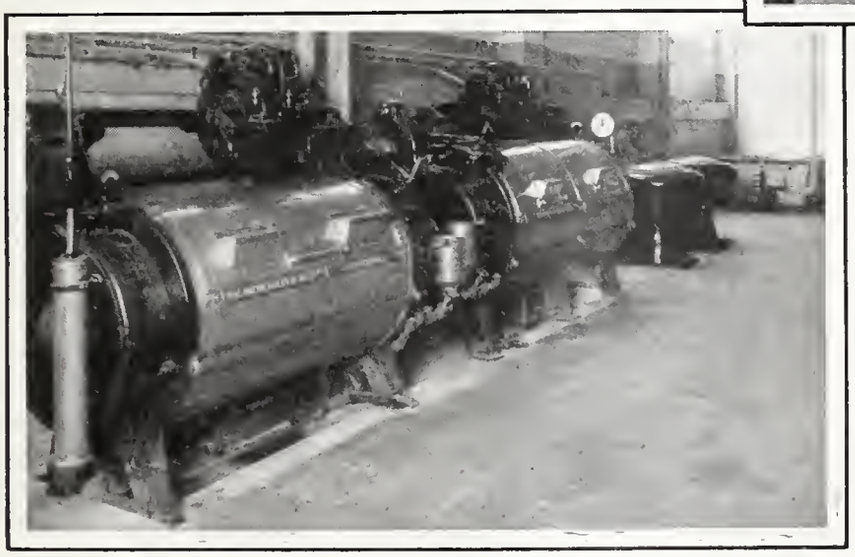

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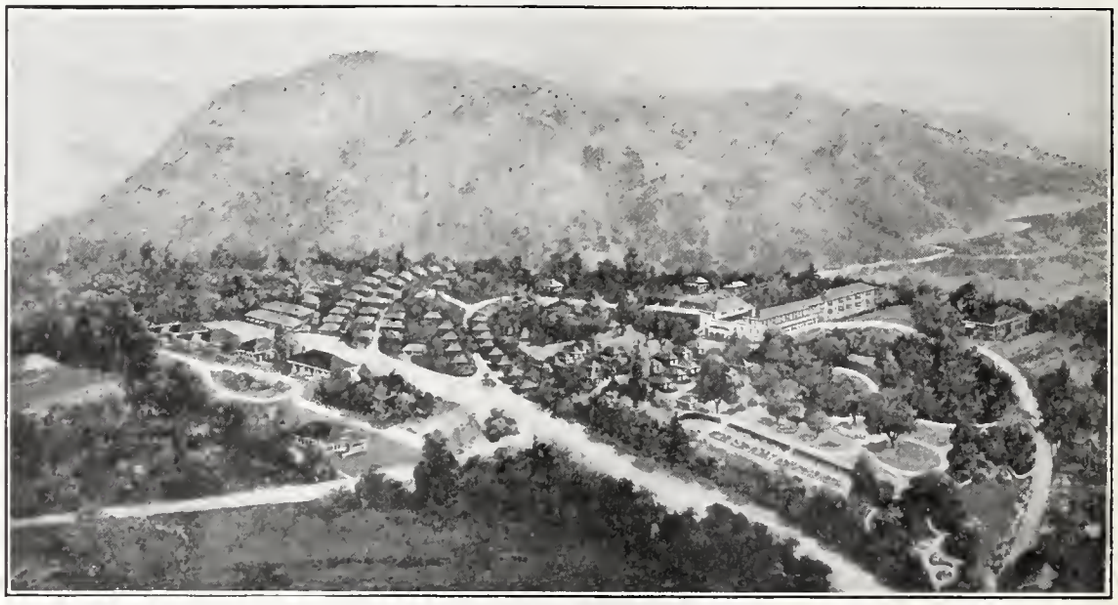

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"Cane sugar, because of its sweetening power, has played an important role in the ordinary feeding of infants, even before the science of pediatrics was established upon a scientific basis. In younger infants, it is better to avoid it and to substitute milk sugar because of the readiness with which cane sugar ferments."—Text-book of "PEDIATRICS" by Professor E. Feer, translated by J. B. Sedgwick, Professor of Pediatrics, University of Minnesota, Page 61.

Lactose Alone Constitutes the Sugar Content in Lactogen

Lactose being the only form of sugar present in normal human milk, and therefore the natural vigor builder for the infant, it is lactose alone that constitutes the sugar content in Lactogen, and in the same proportion in which it exists in normal human milk. Lactogen is not only similar to human milk insofar as carbohydrates are concerned, but also as regards its other constituents.

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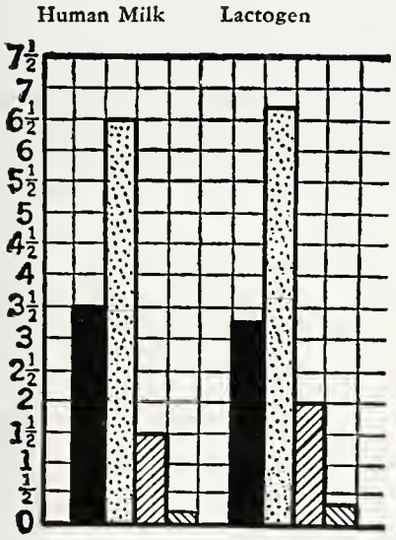
1 part Lactogen (by weight) to 7 parts water



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Carbohydrate	6.5	6.66
Protein	1.5	2.02
Ash	.2	.44
Moisture	88.3	87.76

Human milk yields 20 calories per ounce.
—DR. HOLT, *Page 178.*

Lactogen, when diluted, yields 19.4 calories per ounce.
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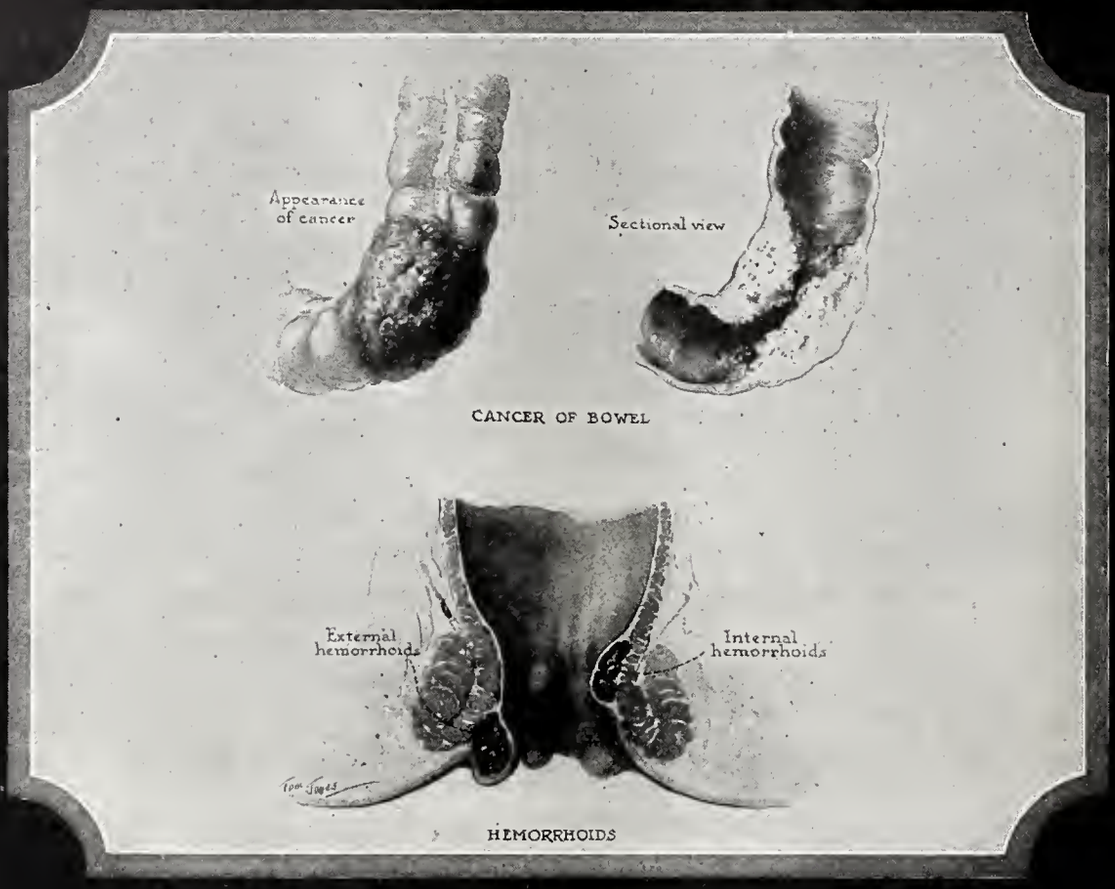

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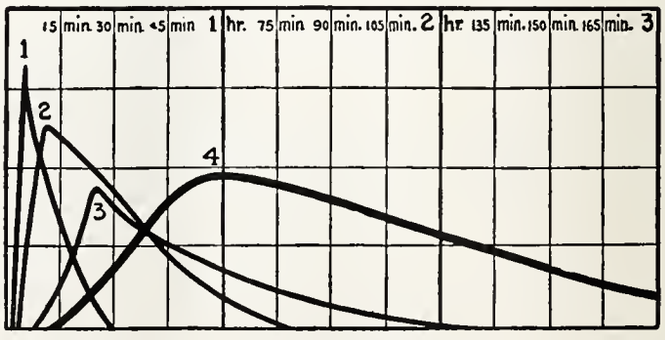

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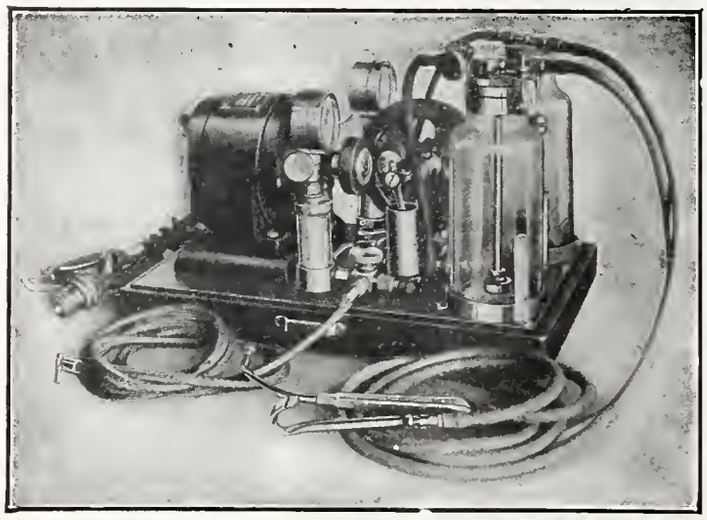

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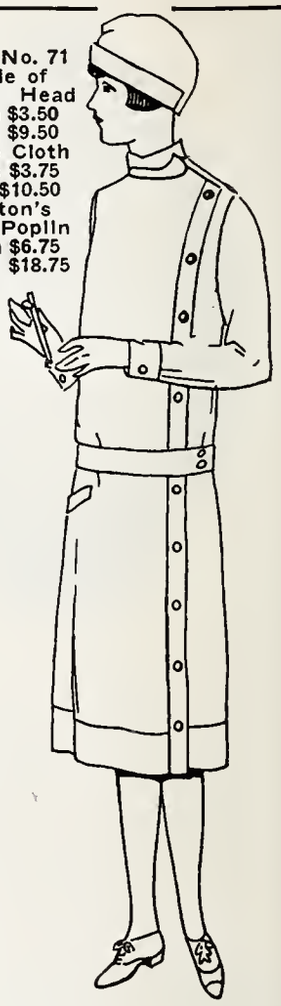

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"Only those clinical laboratories in which the space, equipment, finances, management, personnel and records are such as will insure honest, efficient and accurate work may expect to be listed as approved."

"The housing and equipment should be sufficient to permit all essential technical procedures to be properly carried out."

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"The director of an approved clinical laboratory should be a graduate of an acceptable college or university of recognized standing, indicating proper educational attainments. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry or other allied subjects, for at least three years. He must be a man of good standing in his profession."

"The director shall be on full time, or have definite hours of attendance, devoting the major part of his time to the supervision of the laboratory work."

"The director may make diagnoses only when he is a licensed graduate of medicine, has specialized in clinical pathology for at least three years, is reasonably familiar with the manifestation of disease in the patient, and knows laboratory work sufficiently well to direct and supervise reports."

"The director may have assistants, responsible to him. All their reports, bacteriologic, hematologic, biochemical, serologic and pathologic should be made to the director."

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"Indexed records of all examinations should be kept. Every specimen submitted to the laboratory should have appended pertinent clinical data."

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"Publicity of an approved laboratory should be directed only to physicians either through bulletins or through recognized technical journals, and should be limited to statements of fact, as the name, address, telephone number, names and titles of the director, and other responsible personnel, fields of work covered, office hours, directions for sending specimens, etc., and should not contain misleading statements. Only the names of those rendering regular service to the laboratory should appear on letter-heads or other form of publicity."

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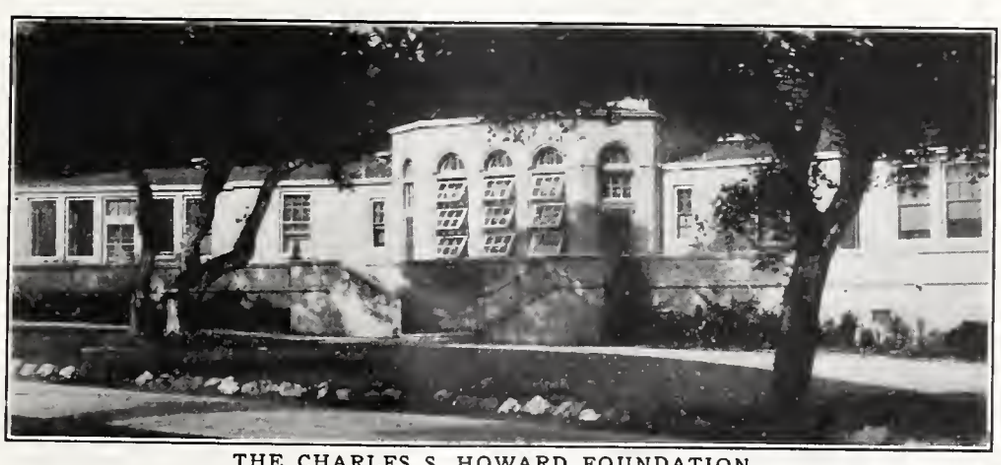

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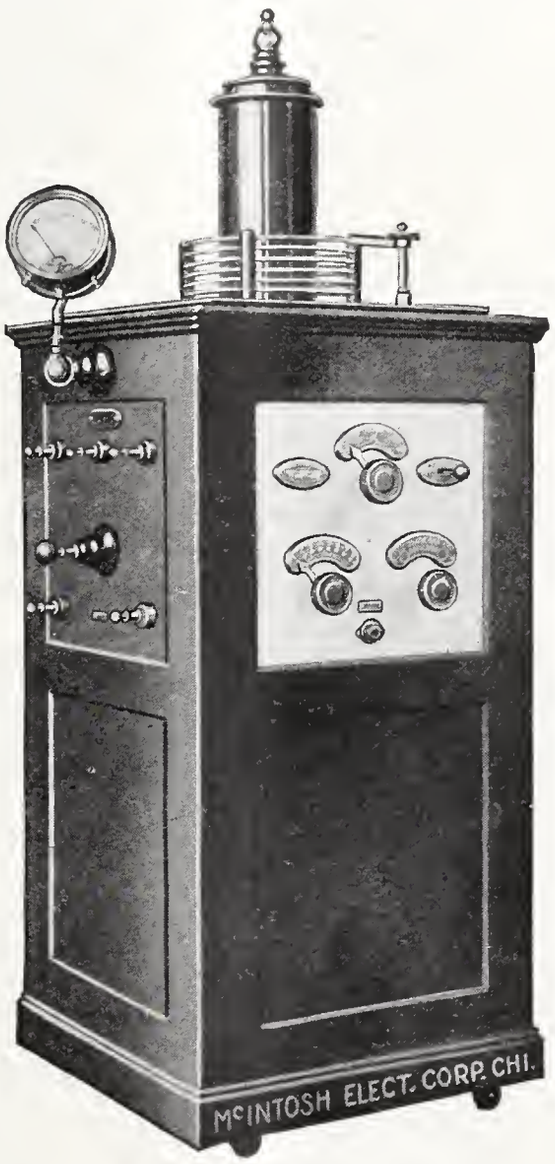

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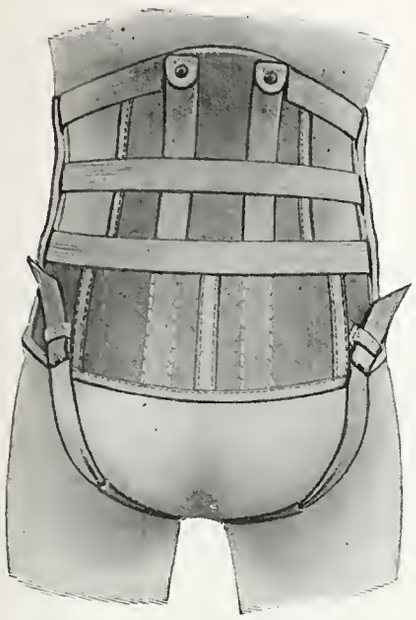

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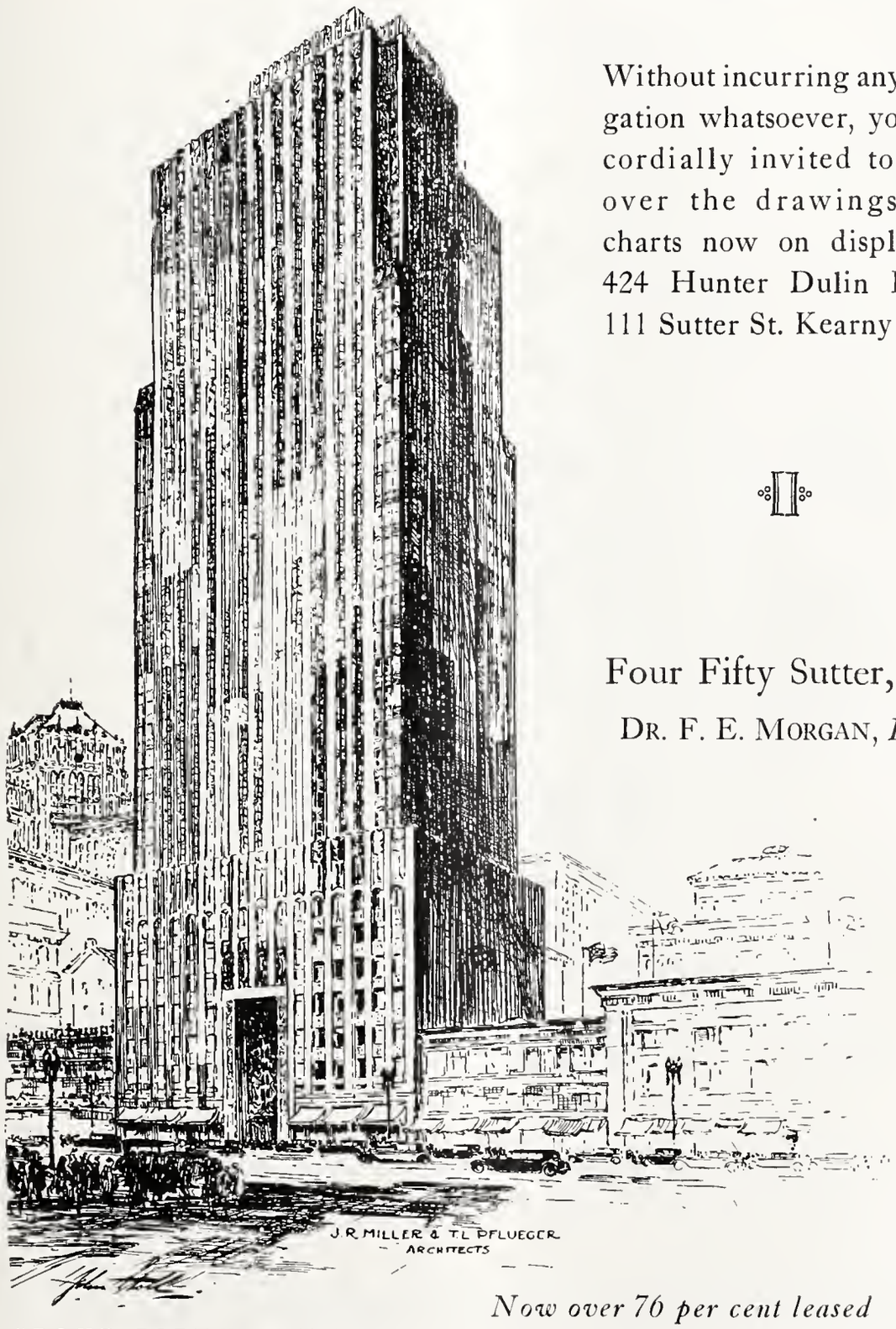

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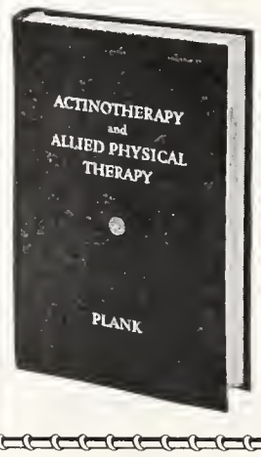

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BOOK REVIEWS

Surgical Diseases of the Gall Bladder, Liver and Pancreas and Their Treatment. By Moses Behrend. Pp. 278. Illustrated. Philadelphia: F. A. Davis Company, 1927.

Dr. Behrend has written this small book in response to numerous requests for reprints of his former publications. As a result some subjects are thoroughly covered, while others scarcely receive due consideration. An attempt has been made to review, in a general way, the embryology, anatomy, physiology, pathology, clinical features, surgical treatment and complications of the liver, gall bladder and pancreas. This, of course, it is difficult to do in a book of this size. There is a good general review of the subject, however, that affords profitable reading. It is to be regretted that Doctor Behrend's extensive experience in these fields cannot be more fully recorded.

There is an interesting chapter on the results of the ligation of the hepatic artery in animals.

S. H. M.

A Textbook on Medicine. By American Authors. Edited by Russell L. Cecil. Pp. 1500. Philadelphia and London: W. B. Saunders Company, 1927.

Any internist who plans to write a textbook of medicine at the present time must, if he is honest with himself, admit that the subject is becoming too broad for authoritative treatment by any individual.

It is with this in mind doubtless, that Cecil has edited a one-volume treatise by many authors containing brief sketches of the various diseases in textbook style. The result, in the opinion of the reviewer, is unexpectedly satisfactory and while naturally there is some lack of balance in the emphasis given to various subjects, one has a very great satisfaction in feeling that each article is written by one fully familiar with his subject. The book, as we have said, is a pioneer attempt and more finished efforts may be expected in the future. Having it on one's shelf, one unconsciously refers to it daily and usually without disappointment.

A. L. B.

Modern Medicine: Its Theory and Practice in Original Contributions by American and Foreign Authors. Edited by Sir William Osler. Third edition. Re-edited by Thomas McCrae, assisted by Elmer H. Funk. Volume 5. Pp. 948. Illustrated. Philadelphia: Lea and Febiger, 1927.

On opening this volume, one is pleased to find the familiar article by Dr. Richard Cabot on "Diseases of the Blood." The revision has kept the subject well up to date. The articles on purpura and hemophilia and diseases of the spleen by Pratt and by Krumbhaar are equally satisfactory, and Longcope's excellent discussion on Hodgkin's disease follows in the succeeding section.

The outstanding part of the volume is undoubtedly that dealing with diseases of the ductless glands. The subject has been handled in masterly style by Dock and Lisser and the reviewer knows of no other English treatise which combines so well an intelligent summary of our knowledge of the ductless glands together with a practical clinical discussion.

The remaining sections of the book are satisfactory in spite of the difficulty of some of the subject matter, such as the vasomotor and trophic disorders and the diseases of muscles and joints.

A. L. B.

Diseases of the Mouth. By Sterling V. Mead. Pp. 578. Illustrated. St. Louis: C. V. Mosby Company, 1927. Price $10.

As announced in the preface, this is a textbook of diseases of the mouth, written primarily for the use of dental and medical students. To the general practitioner and dentist who wishes to recognize or treat oral diseases the book will also be found valuable as a reference on oral pathology and diagnosis.

The book is most thorough in scope regarding pathological lesions and methods of diagnosis and differentiation. It is well illustrated and the colored plates give one much valuable information as to the actual appearance of the lesions described.

The author has evidently intended his work to be one featuring the pathology and diagnosis of oral lesions rather than an exhaustive work on treatment. The book is notably lacking in technical details of treatment, especially in those conditions requiring the care of a physician; the author being content with the statement that the case is one requiring medical or surgical treatment. The paragraphs on treatment throughout are short, to the point and almost totally lacking in whys and wherefores, undoubtedly with the intention of giving the reader the meat of one treatment rather than a choice of treatments and the principles involved.

This work is an excellent one to have at hand for reference on oral pathology and its value is immensely enhanced by the rather complete bibliography given at the end of each chapter. Those who wish further and more detailed information than found in the text, especially on the procedures of treatment, will find ample references for further study of their particular problem in the bibliography section.

R. W.

(Continued on Page 302)

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BOOK REVIEWS

(Continued from Page 301)

Compendium of Regional Diagnosis in Affections of the Brain and Spinal Cord. A concise introduction to the principles of clinical localization in diseases and injuries of the central nervous system. By Robert Bing. Third edition. Pp. 204. Illustrated. St. Louis: C. V. Mosby Company, 1927. Price $6.

Sixteen years' use in the English editions have made Bing's Compendium so well known to students and practitioners that no introduction is necessary. The press work of the English edition is quite as good as that of the German, something which cannot always be said for translations and the translation itself is an accurate rendering of the German into idiomatic English, something which unfortunately cannot often be said. The book is a most desirable vade mecum for students and practitioners and may be unreservedly recommended.

E. W. T.

Prenatal and Maternal Care. By W. E. Hunter. Pp. 229. Illustrated. San Francisco: J. W. Stacey, 1927.

A reasonable knowledge of the fundamentals of pregnancy and labor would be a valuable possession of our prospective mothers, not only because of the increased rationality of their own conduct during pregnancy, but because it would give to them criteria by which they could judge the quality of the obstetrical care furnished to them by their medical attendants. Such knowledge on the part of these mothers-to-be would soon create the demand for a quality of prenatal and maternal care which is not yet asked for and, therefore, has not yet been attained.

In his book the author has endeavored to present simply and clearly the fundamental facts of the physiology of reproduction, the course and complications of pregnancy and the mechanism, progress, and complications of labor, together with a careful exposition of the hygiene of pregnancy, the care of complications, the proper handling of normal and abnormal labors and the after-care of the mothers.

His language is simple and clear, his discussion of complications designed to warn the patient rather than to frighten her, and throughout the book his purpose is evidently that of presenting to her only those elements of obstetrics which she may understand. Wherever alternative procedures exist both are noted, and it seems that a knowledge of the material presented in this book should make a patient fairly conversant with the measures necessary to safeguard herself and her child throughout pregnancy and reasonably critical of inferior care offered to her by her obstetrical attendant. The sooner mothers know what constitutes proper prenatal and maternal care the sooner will obstetrics pass into the hands of those competent to do it. This is an added reason why the book is well worth reading by any prospective mother.

T. H. K.

Diseases of the Skin. By Henry H. Hazen. Third edition. Pp. 572. Illustrated. St. Louis: C. V. Mosby Company, 1927.

Not only is this an excellent book for the general practitioner and the student, but it is peculiarly adapted and of especial interest to the physicians in the southern states because of the author's wide dermatological experience with the negro. Interesting comparisons are made between the two races with special reference to the appearance, frequency and prognosis of the skin lesions.

The importance of trade and professional dermatoses in modern medical practice is emphasized and the numerous irritants responsible such as the aniline dyes, arsenic, alcohol, alkalis, benzine, inks, tobacco, etc., are commented upon as well as the occupations in which they are employed. The tendency upon the part of modern writers to minimize this subject is regrettable.

Considering the size of the book, the subject of treatment is well handled, although open to differences of opinion, especially in the therapy of syphilis. While it is true that frequent changes and advances are being made in the treatment of this disease, it is questionable whether arsphenamin is so superior to neoarsphenamin, that the latter should be given little or no recognition, especially when one considers its wide use by such eminent syphilologists as Erich Hoffmann, Zurhelle, etc.

In this book, as well as in many others of recent origin, bibliography is omitted.

S. C. W.

Physical Diagnosis. By Richard C. Cabot. Ninth edition. Pp. 536. Illustrated. New York: William Wood and Company, 1927. Price $5.

The new edition of this dictionary of physical signs needs no introduction. It contains a precise and concise description of all the procedures which, in his thirty-odd years of intensive medical experience, the author has found to be of assistance in the diagnosis of disease. Intended originally as a guide and aid to the young practitioner when the first edition appeared in 1905, this book soon became and remains the standard textbook of

(Continued on Page 304)

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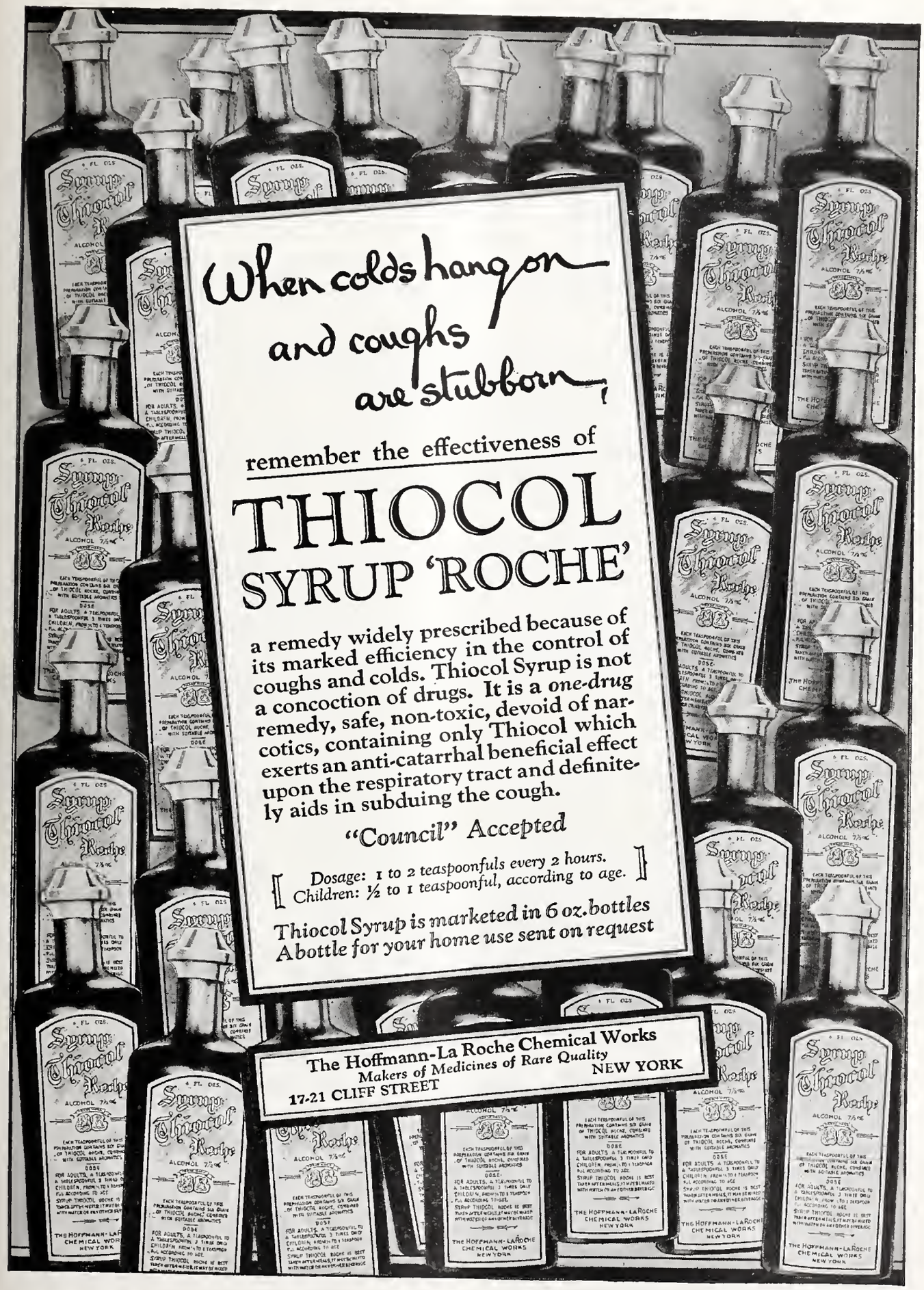
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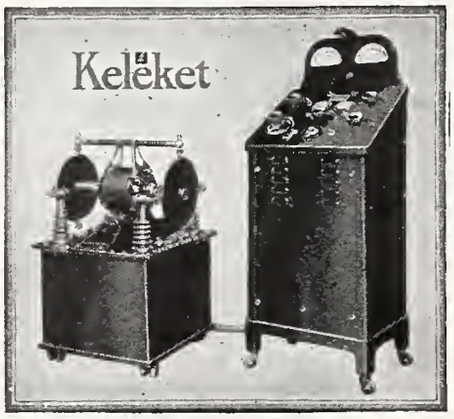

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BOOK REVIEWS

(Continued from Page 302)

students of physical diagnosis in many of our leading medical schools. One rather unique factor in the popularity and value of this volume is the author's frequent reference to his personal experience with the various tests and procedures, in contrast to the usual dogmatic assertions found in most texts.

The important feature of this new edition is the introduction of reference numbers which correspond to a set of phonographic records of heart sounds. These records, soon to be marketed by the Columbia Phonograph Company, are the outgrowth of an idea conceived many years ago by Doctor Cabot, to prepare permanent reproductions of cardiac irregularities and murmurs for use in the instruction of students as well as to refresh the acoustic memories of busy practitioners. The writer has had the pleasure of listening to several of these records, and when used to supplement the study of the chapters on diseases of the heart they must certainly prove to be of great value. Congratulations are due to Doctor Cabot and his able assistants for solving the technical problems in connection with the phonographic reproduction of so faint a sound as a diastolic murmur, and it is to be hoped that before long the similar reproduction of breath sounds and rales will become an accomplished fact.

H. C. B.

The Endocrines in General Medicine. By W. Langdon Brown. Pp. 144. New York: Paul B. Hoeber, 1927. Price $3.

The reviewer read this book from cover to cover, which was no arduous task, as it is pleasantly written, compact, comprising only 144 pages. It certainly is one of the very best brief books on clinical endocrinology in the English language. This does not constitute overwhelming praise, however, since very few of the shorter works in English, heretofore published, deserve much recognition for scientific accuracy, even from the clinical point of view. This criticism, of course, does not apply to many excellent monographs on individual glands such as the thyroid, pituitary or sex glands, nor to the chapters on endocrinology in several splendid systems of medicine.

In his preface the author writes, "In this book I have attempted to give a brief account of the endocrine system and its diseases in a form which I hope may be of service to the general practitioner. There are several encyclopedic works on this subject full of detail, which, however valuable to the special worker and for purposes of reference, are on too large a scale for the busy practitioner to assimilate. There are also books dealing purely with the physiology of the ductless glands, necessarily cautious in tone, which are perhaps apt to leave the impression that clinical methods are of little avail in unraveling the problem. There are others which are more frankly speculative."

The author's intention is a most welcome one; there is widespread clamor for just such a book. Has he fulfilled his purpose? The reviewer is not altogether certain that he has.

With the exception of diabetes mellitus, diabetes insipidus, and the vasomotor symptoms of the menopause, endocrine syndromes lend themselves beautifully to photography. There are no illustrations in this book to help the general practitioner in visualizing the clinical descriptions, and the latter vary in clarity and completeness. One may question their adequacy for the very persons for whom they were written.

The therapeutic comments are not so detailed as the average uninitiated reader might wish for, but the chapter on appraisal of endocrine therapy is thoroughly sane and conservative without being utterly intolerant. The book should be highly interesting for the discriminating internist and specialist in endocrinology, though this does not seem to have been the primary purpose of its author. The opening chapter on the biology of the endocrine system contains much stimulating thought. The relationship of the endocrines and the visceral nervous system is exceptionally well handled. Though essentially and deliberately clinical, a thoroughly sound scientific spirit pervades the entire book. It is replete with illuminating ideas and is remarkably free from whimsical speculation. One might be disposed to question some of the clinical interpretations and deductions, but who nowadays would expect two endocrinologists to agree on more than 80 per cent of the subject, and if as high a percentage as that can be heartily endorsed, an author has done exceedingly well.

Some important work of recent years is altogether omitted, and credit is not always given, and the great majority of the references are quite naturally British, with only a rare allusion to French, German, American or other foreign writings. but this could hardly be otherwise within a compass of 144 pages.

This book of Langdon Brown can be cordially recommended to all physicians, but the reviewer still wonders how much of it the general practitioner will be able to translate into actual practice.

H. L.

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Physical Diagnosis. By Charles Phillips Emerson, M. D. 324 illustrations. Review copy by courtesy of the publishers, J. B. Lippincott Company, Philadelphia.

Crawford W. Long, the Discovery of Ether Anesthesia. By Frances Long Taylor with a foreword by Francis R. Packard, M. D. With eight full-page plates. Review copy by courtesy of the publishers, Paul B. Hoeber, Inc., New York.

The Peaks of Medical History. An outline of the Evolution of Medicine for the Use of Medical Students and Practitioners. By Charles L. Dana, M. D. Illustrated with forty-three full-page plates and sixteen text illustrations. Second edition. Review copy by courtesy of the publishers, Paul B. Hoeber, Inc., New York.

Pathological Physiology of Internal Diseases. Functional Pathology. By Albion Walter Hewlett, M. D. Revised in Memoriam by his Colleagues, under the editorial supervision of George DeForest Barnett. With one hundred and sixty-four illustrations in text. Review copy by courtesy of the publishers, D. Appleton and Company, New York.

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Phanodorn—Cyclobarbital—Phanodorn differs from barbital (diethyl-barbituric acid) in that one of the ethyl groups of barbital is replaced by a cyclohexenyl group. The actions and uses of phanodorn resemble those of barbital, but it is more than twice as active as barbital and the therapeutic dose is correspondingly smaller. It is eliminated more rapidly than barbital; hence the action is not so lasting. This is an advantage when it is used merely to put one to sleep where sleep will then continue without its further action. It is used mainly for its sedative action. Winthrop Chemical Co., Inc., New York.—*Jour. A. M. A.*, January 14, 1928, p. 117.

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Iletin (Insulin—Lilly) U-100, 10 cc.—Each cubic centimeter contains 100 units of insulin—Lilly (New and Nonofficial Remedies, 1927, p. 198). Eli Lilly & Co., Indianapolis.—*Jour. A. M. A.,* January 28, 1928, p. 293.

PROPAGANDA FOR REFORM

Nobro—This is another phenobarbital (luminal) mixture sold as a cure for epilepsy. It is put out by the Nobro Medic Co., Worthington, Ohio, and sold on the mail-order plan. The individual behind this concern seems to be one Harry M. Freck, whose claim to medical knowledge appears to be based on the fact that he once operated the Freck Garment Co., and at present conducts the Freck Stenographic Bureau and an advertising circular-letter business. He has been connected with other "patent" medicines. Nobro comes in the form of pink capsules. The "course" consists of ninety capsules sold for $4. The A. M. A. Chemical Laboratory analyzed Nobro and reports that each capsule contains essentially 0.0414 gm. (approximately three-fifths grain) of phenobarbital to which has been added lactose.—*Jour. A. M. A.,* January 7, 1928, p. 49.

Desiccated Parathyroid Gland Preparations Omitted from N. N. R.—The general article Parathyroid Gland, in New and Nonofficial Remedies, 1927, states that there is no conclusive evidence for the oral use of parathyroid gland preparations. In 1926 the Council decided to omit all such preparations with the close of 1927 unless in the meantime evidence should develop to show that they were effective. No such evidence has developed. On the contrary, evidence in the opposite direction has become available. Accordingly the Council directed the omission of all the accepted brands of desiccated parathyroid gland from New and Nonofficial Remedies.—*Jour. A. M. A.,* January 14, 1928, p. 117.

(Continued on Page 318)

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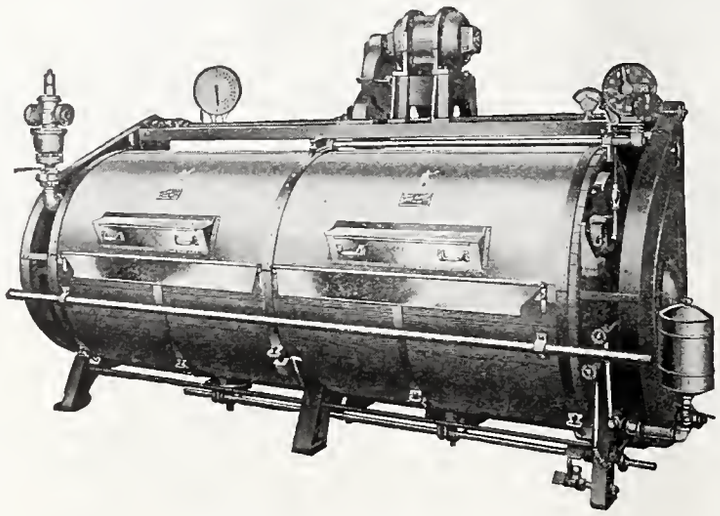

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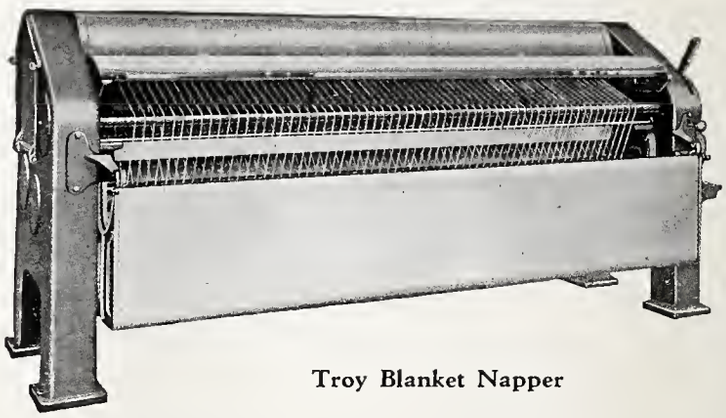

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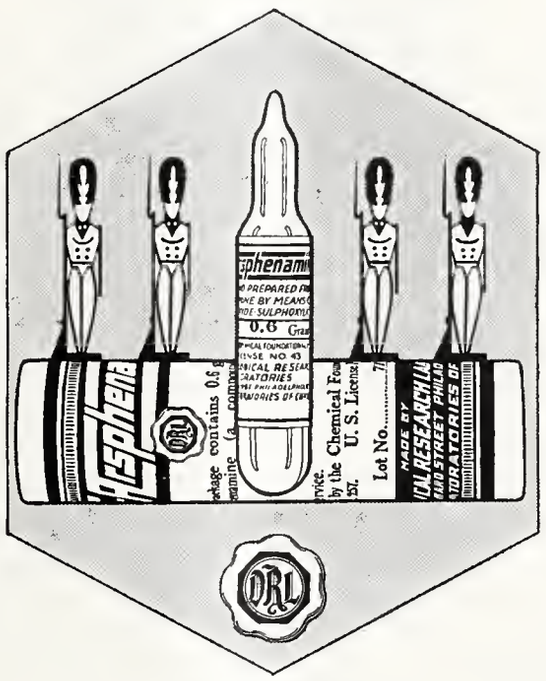

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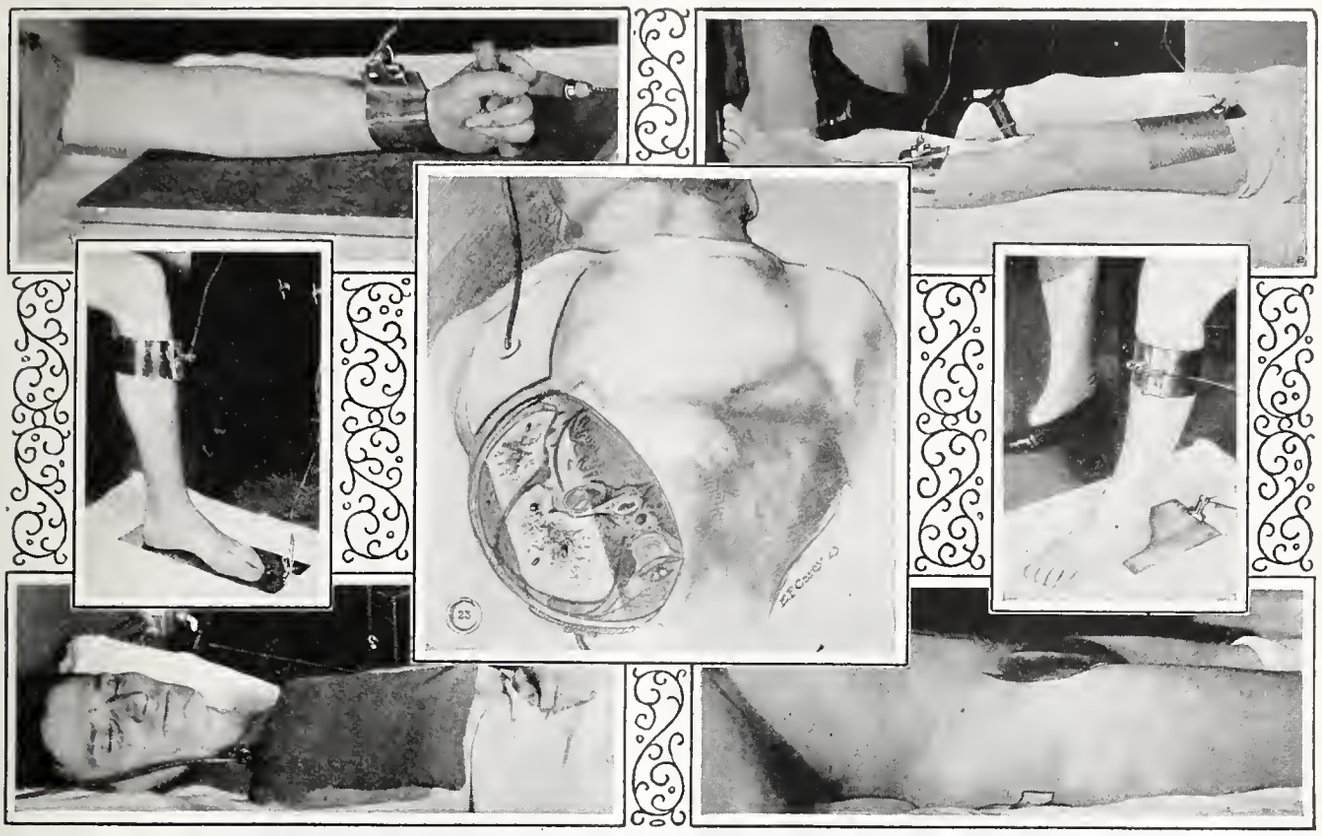

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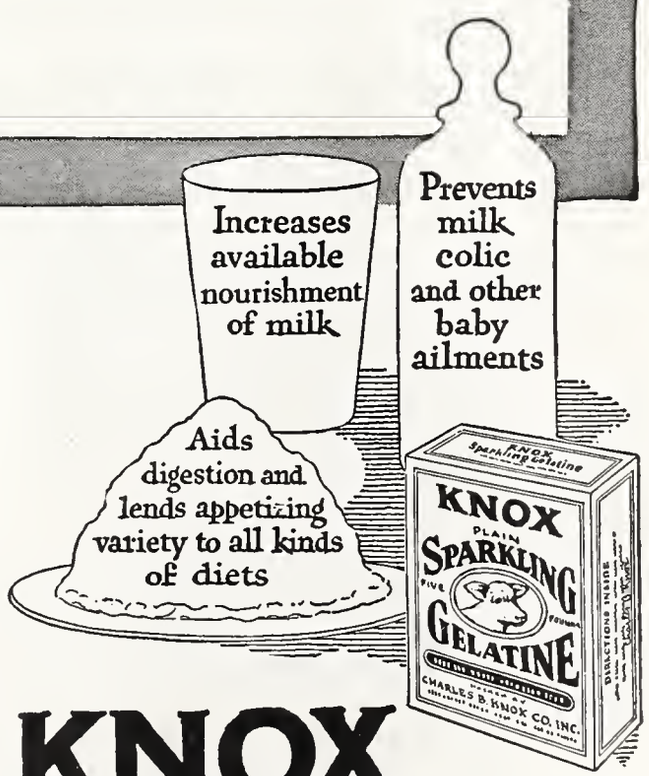
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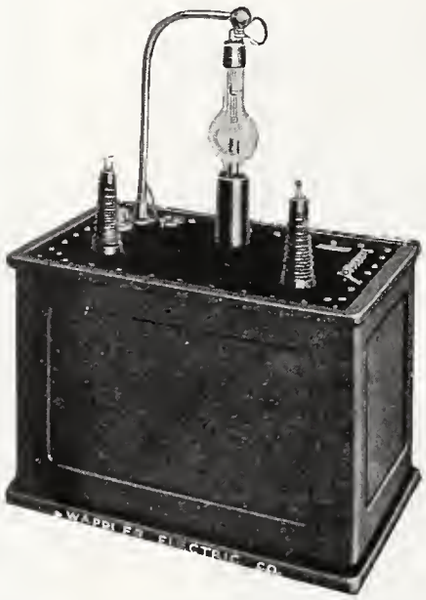

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TRUTH ABOUT MEDICINES

(Continued from Page 309)

Aseptones not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that under the noninforming but therapeutically suggestive name "Aseptones," the Scent-Ets Co., Brooklyn, markets a mixture stated to have the following composition: menthol, 0.40; salicylic acid, 2.00; sodium chlorid, 60.00; zinc sulphate, *dried,* 65.00; alum, *dried,* 65.00; boric acid, granular, to make 500.00; tincture of cudbear, 2 cc. The preparation is referred to as "the astringent and antiseptic Douche Powder." The Council found "Aseptones" unacceptable for New and Nonofficial Remedies because it is an unscientific mixture, marketed under a noninforming, therapeutically suggestive name,, and without declaration of its quantitative composition.—*Jour. A. M. A.,* January 14, 1928, p. 117.

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(Continued on Page 409)

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VOLUME XXVIII MARCH, 1928 No. 3

IMMUNITY PHENOMENA IN TUBERCULOSIS—SOME CLINICAL ASPECTS*

By Frederick Eberson, M. D.
San Francisco

Discussion *by W. R. P. Clark, M. D., San Francisco; William C. Voorsanger, M. D., San Francisco; Chesley Bush, M. D., Livermore; Karl F. Meyer, Ph. D., San Francisco.*

PERHAPS it is truer for tuberculosis than for any other infectious disease that to react is to live or that to live is to react. One of our modern writers doubtless implied this when he said that to be absolutely still and unresponsive is a virtue only of the dead.

REACTION AND DEFENSE OF THE BODY

The different clinical manifestations of tuberculosis are outward expressions of complicated reactions taking place within the body. To what extent the tissues and their secretions play a part individually or collectively is a moot question. We have the humoral and the cellular schools of immunology with opposite points of view, but a middle ground between the two extremes would appear to be more nearly correct. Indeed our present-day knowledge of immunity phenomena tends to embrace the joint activities of both cells and cell products. An idea of the mechanism of tuberculous infection may be gained if we analyze the disease at its inception and trace its development through various stages and their attendant symptoms and signs. The course of the disease will be modified, however, depending upon whether we are dealing with a primary infection or a reinfection. The implantation of tubercle bacilli leads in either case to the formation of special structures in the cells and in the tissues. If the infection be a primary one the bodily response will depend upon native powers of resistance, and if secondary, upon the specific resistance or immunity developed by the first infection. Clinically these immunologic differences are seen in the well-defined types of pulmonary tuberculosis. In one fibrosis and proliferation with arrested disease occur, and in the other exudation, caseation and complete breaking down of tissue with the formation of cavities and generalized disease.

The contrast between primary infections and reinfections is sharply drawn anatomically, not only in the early stages but in the method of healing. In childhood we see a typical form of scarring, as pointed out by Puhl[14] in 1922. Calcification is always present along with a marked tendency to ossification. The initial lesion lies usually immediately beneath the pleura and may occur in any part of the lung, usually in the upper lobes. The area shows exudation and a rapidly caseating bronchopneumonic focus that is sharply delimited, and the related lymph nodes show caseous foci. Healing is characterized by the formation of granulation and scar tissue surrounded by a dense fibrous capsule. This chalky mass is gradually absorbed by invading connective tissue that builds typical bone.

Reinfections, however, may be multiple, occur chiefly in the apex of the lung, and are situated more frequently within the lung substance. Healing in this type of disease causes contraction of the surface of the lung. Such foci of reinfection, unlike those of a primary infection, show productive or proliferative changes, usually in the vicinity of a small lobular bronchus. In this unit of pulmonary tissue the tubercle bacillus becomes localized. Ultimately these foci caseate and calcify, but only rarely do they form bone. Characteristic of this type of infection is the freedom from involvement of the related lymph nodes. The primary infection heals completely in a great majority of people. In over 90 per cent of adults the scars of an early infection can be demonstrated. In a certain number of children and of young adults the primary lesion goes over into the stage of generalization or metastases. In such instances the process is manifested as a lymph node tuberculosis and not so much a pulmonary involvement.

SENSITIZATION PHENOMENA

At this stage of the disease we are presumably dealing with the so-called "anaphylactic" period. We see the well-known diffuse enlargement and caseation of the tracheobronchial lymph nodes involving not only those of the primary focus, but also the entire chain of hilus nodes. This picture has been described as scrofula, and is the type of tuberculosis in which caseation and softening of the lymph nodes may bring about a rapidly advancing type of aspiration pneumonia that is frequently the cause of death in children.

Concomitantly with the processes going on in the lung, metastases to other parts of the body may occur by way of the blood stream. The general picture of a reinfection in the anaphylactic or sensitization period includes clinical phenomena associated with involvement of the skin, middle ear, mucous membranes of the nose, mouth, pharynx, and cornea where phlyctenules, or vesicles, are often seen. The clinical aspect of this stage would appear to represent a violent reaction

* From the Department of Medicine, University of California Medical School, San Francisco.

* Read before the Section on Medicine, San Francisco County Medical Society, September 6, 1927.

of the previously sensitized body against an infection with the identical virus. One might enlarge upon this idea of immunity phenomena by extending the observations further to miliary tuberculosis, which is found in infancy and characterized by tubercles in all of the organs. It is believed by some that this type of infection has been used erroneously as an example of a remarkably rapid form of dissemination of the virus in the young subject. Inasmuch as the extraordinary blood invasion is accompanied by local reactions, a certain amount of immunity must have been developed. If this were not so the patient would die of tubercle sepsis. Reports of recovered cases of miliary tuberculosis have been generally doubted, yet in the light of pathologic and immunologic findings we should not be surprised to find a rapid dissemination through the blood stream of large masses of tubercle bacilli in a more or less markedly immunized body. It would seem that true disseminated tubercle formation ought to occur in proportion to the acquired resistance.

RESISTANCE TO TUBERCULOSIS INFECTION

Resistance to invasion by the tubercle bacillus is dependent upon the virulence of the bacillus, the susceptibility of the patient and his resistance. Susceptibility is determined by the constitution of the individual and his heredity. Evidence has been presented by Raymond Pearl[13] to show that there is, in the father's kinship, a definite tendency toward constitutional inferiority of the respiratory system, manifested chiefly in early adult life, in a lack of resistance to pulmonary tuberculosis. In the mother's kinship he has been able to show a lack of resistance to non-fatal respiratory infections such as bronchitis and bronchopneumonia in infancy and childhood. It is clear that in the children of such parents there will be an extremely low resistance to any sort of respiratory infection. It has been suggested recently that the "cautious young woman of the future will insist upon looking up the family history of her prospective husband, not to ascertain whether he can trace his lineage to the Mayflower, but to learn if there is in his family a constitutional tendency to weakness of the respiratory system or other organs."

Another side of the picture has been presented by the studies of the inheritance factor[1] in tuberculosis from an analysis of cases in persons giving a positive or a negative history of this disease in parents. Drolet[2] has adduced evidence of fundamental importance in this connection. It was found that exposure to tuberculosis was reported more frequently among the non-tuberculous patients than among those who were tuberculous. More than 30 per cent in a group of 2509 non-tuberculous persons gave a history of tuberculosis in one or both parents; whereas in a group of 2785 tuberculous patients only 14 per cent reported a parental history of infection. Among 5852 subjects with a negative history of tuberculosis in parents, 59 per cent were found to be tuberculous, whereas among 1577 persons with a positive parental history 34 per cent were tuberculous. Making due allowance for the smaller number of subjects in this last group, the difference none the less appeared striking enough to warrant the conclusion that the incidence of the disease was inversely proportional to the amount of parental infection. Further evidence showed a greater tendency to recovery in patients with tuberculous parents than in members of families attacked by the disease for the first time. Within recent years we have been observing an almost universal decline of tuberculosis in countries or communities where it was formerly epidemic. There is good reason to believe that the decreased incidence of the disease in racial stocks that have been exposed to city life and to tubercle infection has been due, in a measure, to an increasing immunity thus acquired.[3] Children of tuberculous parents do not inherit predisposition to the disease, but rather an increasing degree of immunity.

LATENCY IN TUBERCULOSIS

A sharp line of differentiation cannot be drawn between latency and immunity in tuberculosis. In common with syphilis, typhoid fever, malaria and diseases caused by trypanosomes, tuberculosis may become latent. By latency we mean that such a balance has been struck between the host and the parasite that an infection becomes dormant and the patient apparently well. There is an armed truce, so to speak, and the borderland between resisting and attacking forces may or may not yield to the advantage of the parasite. In such persons micro-organisms are present somewhere in the body; and these organisms, although wholly innocuous for the individual host, are potentially virulent and become actively so when transplanted to a suitable environment, which need not necessarily be another host.[4] Clinicians observing tuberculosis must be impressed by the fact that they do not often find a satisfactory correlation between the clinical perception of the initial tuberculous lesion and its anatomical and pathological significance. A lesion may remain latent for a long time and cause no apparent clinical symptoms. A disease that is seemingly clinically incipient has often already progressed far beyond the primary stage from the anatomical and pathological point of view.

Sight must not be lost of accidental factors in the sudden explosion of a tuberculous process. Physical strain, acute respiratory infections, and other causes may come at inopportune moments. If they come when a tubercle is well localized and healed they may be without effect, whereas at another time serious illness may result. This has been well shown in carrier conditions in animals as well as in patients. One of the best examples of the effect of added strain is the frequent death in mice from mouse typhoid following an infection with pneumococci. The bacillus which causes mouse typhoid assumes a latent or carrier state, but may be transformed into an active fatal infection by the mere introduction of some depressing influence from without, in this particular instance a pneumococcus. In the case of patients the bal-

ance between host and parasite is often broken by a superimposed disease or physical stress.

Clinical experience has given abundant evidence of the immunizing effect brought about by a primary infection with tuberculosis. Despite the great extent of such infection the number of persons with actual illness is remarkably low. There must be a natural resistance else we should all be sick. This observation has been borne out by the devastating effect of disease such as tuberculosis, malaria, or smallpox, when introduced among primitive peoples for the first time. One cannot assume, however, that there is a native immunity to tuberculosis, for, if exposed, all become infected and practically every human being reacts to tubercle formation. Such difference as does exist is in the mode of reaction in certain people and in the young as compared with adults.

The tubercle bacillus had celebrated its twentieth birthday anniversary when Sir William Osler[12] drew the famous parallel between tuberculous infection and the parable of the sower. Today, almost a quarter of a century since he wrote that, we may quote him and summarize the course of tuberculosis in terms of the soil and the conditions suitable for the growth of the organism in the body. *"Some seeds fell by the wayside and the fowls of the air came and devoured them up."* These are the bacilli scattered broadcast outside the body, an immense majority of which die. *"Some fell upon stony places."* These are the bacilli that find lodgment in many of us, perhaps, with a production of a small focus, but nothing comes of it. They wither away "because they have no root." *"Some fell among thorns, and the thorns sprang up and choked them."* This represents the cases of tuberculosis, latent or active, in which the seed finds the soil suitable and grows, but the conditions are not favorable, as the thorns, representing the protecting force of the body, get the better in the struggle. *"But others fell on good ground and sprang up and bare fruit an hundred fold."* This last is too obvious for comment.

MECHANISM OF RESISTANCE TO FIRST AND SUBSEQUENT INFECTIONS WITH TUBERCULOSIS IN THE EXPERIMENTAL ANIMAL

The immunity phenomena that are associated with various clinical manifestations of tuberculosis may be studied in the experimental animal. The effects of first and subsequent infections may be clearly seen when experimental inoculations are made within the skin or in the cornea. The early anatomical response of the tissues of a susceptible animal inoculated for the first time is unlike that seen when reinfection is practiced. In the first instance a well-circumscribed nodular tubercle will develop slowly after a week or more, without any of the signs of inflammation. Only later, after three or more weeks, does redness appear around the tubercle, associated with changes that are indicative of a progressive lesion. At this stage the animal has become allergic, that is to say, it begins to react in a new way because of the changes set up in the body by the tubercle bacilli. The susceptibility of the animal has been altered. If such an animal now receives an intracutaneous inoculation of tubercle bacilli the response by the tissues is rapid and local inflammation occurs. Instead of proliferation that is well localized we observe a diffuse exudation. The inflammation occurs rapidly and subsides as rapidly, and the nodular tubercle now present retrogresses and may disappear completely. All of these changes, be it remembered, are contingent upon moderate dosage of tubercle bacilli.

It is obvious that a similar set of conditions in the human is accompanied by a corresponding sequence of clinical events. With an understanding of the difference in the mechanism in the examples cited, it is possible to envisage more clearly the clinical picture of the disease.

INFORMATION GIVEN BY TUBERCULIN REACTIONS

An important aid in the study of these conditions in the human is found in skin tests made with products of the tubercle bacillus. While the mechanism of tuberculin reactions is not understood very clearly, it has been stated that such reactions indicate a focus of tuberculosis somewhere in the body. It has been thought for many years that a positive tuberculin test presupposes tubercle infection and does not occur unless there is present a specific allergy or hypersensitivity to the infection. Recently, however, it has been shown[5, 6] that such hypersusceptibility to tuberculin products can be developed artificially and, under certain conditions, will give rise to a definitely positive tuberculin test even in the absence of tuberculosis. Furthermore, normal animals made allergic in this way react to an injection of tubercle bacilli in a manner identical with that seen in cases of reinfection with tuberculosis. With this as a point of departure, it is noteworthy that the bacillary element, which is another way of describing tuberculin, is capable of sensitizing the normal animal body. This may be construed as heterodoxy or worse by certain workers in the field of tuberculosis. However, the newer results have been based on careful studies of fundamental principles of immunology tested rigorously in many hundreds of subjects. That these new tuberculin derivatives have superior diagnostic value seems to be well established, moreover, by clinical and laboratory tests. Although these observations[7, 8] tend to confute known facts concerning ordinary tuberculins, it is well to seek the causes for the discrepancies in the type of substances used and in the technique of their preparation. Without giving a detailed description of these new materials, it is significant that they have been prepared from non-protein synthetic culture media and represent specific substances produced by tubercle cultures. It is not strange that these fractions of tuberculin prepared and purified by new methods should behave differently from ordinary old tuberculins. These represent an unknown mixture of non-specific substances from the bacilli and culture media, and which, as a whole, cannot be standardized. It is clear that, although a complex mixture may be of little value in the study of

immunity phenomena by skin tests, certain derivatives may be important and differ individually as components. If one may take a simple analogy, it is known, for example, that water, containing as it does hydrogen and oxygen in combination, will quench fire (and thirst, perhaps), but what are we to say regarding hydrogen and oxygen themselves?

THE VALUE OF TUBERCULIN TESTS IN CONTACT AND NON-CONTACT CHILDREN

In general, it is clear that a tuberculin reaction does signify allergy in a clinical sense. When taken in conjunction with positive clinical findings and a definite history of exposure to tuberculosis, a positive skin test with tuberculin gives us information of some value. There are some who maintain that a positive test is fraught with dire significance, and others who believe that the test means nothing. Again, if we take the middle ground, we arrive at a more reasonable interpretation of facts. Combined with thorough clinical study and evaluation of all the clinical and laboratory data, tuberculin tests, when made with a suitable substance, can be so correlated as to give a definite answer to the question regarding a positive or a negative diagnosis. Diagnostic techniques have been known to fail signally, not because the test itself is worthless, but because those who make use of it fail to appreciate its limitations. At some time in the future we may be able to say more definitely that a certain set of symptoms and signs means tuberculosis in childhood. Today all of the classic symptoms suffer from the need of careful evaluation and interpretation.

If the tuberculin test is to mean something definite in the study of tuberculosis, a difference should be noted in the number of reactors or non-reactors in groups of children who are known to be contacts and in those who are non-contacts. A study of the literature on the subject suggests that the non-contact groups have been inadequately selected because the age of the patient has usually not precluded exposure to tuberculous infection. It is only in an age group in which the subjects can be rigidly observed at home or in an institution that certain variables that are most likely to vitiate a clinical experiment may be controlled. The consensus seems to be that contacts give a higher percentage of positive tuberculin reactions than do non-contacts. Recently studies by Green and Forbes[11] have shown that 64.5 per cent of contacts gave positive tests, whereas 19.4 per cent of non-contacts were positive. In another study by Friedman[10] 53.6 per cent of contacts and 23.2 per cent of non-contacts were found positive to tuberculin. Still another article by Slater[15] in 1924 indicated that, among the contacts studied, 81 per cent as against 5.3 per cent of non-contacts gave positive tuberculin reactions. Allowing for the error in classification of strict non-contacts, these figures are what one would expect to find if the tuberculin substances measured the reactivity of a patient in terms of a specific bacillary element.

RÔLE OF TOXINS IN TUBERCULOSIS

Our knowledge of immunity phenomena in tuberculosis has been based primarily on the conception of bodily defenses against the bacillus. It is questionable if this resistance ought to be considered as antibacterial only. Clinically, tuberculosis is a toxemia, and it is reasonable to suppose that an immunity toward the disease would be antitoxic as well as antibacterial. At least our efforts toward combating the infection might well be guided by such a possibility.

Accordingly, in the experimental studies, attempts have been made to identify toxic substances in the blood serum of tuberculous patients and animals and in cultures of tubercle bacilli. The results suggest that there is a toxin wholly unlike tuberculin or the bacillary element, and that this toxic substance can be neutralized by artificially prepared antitoxic serum. These deductions are based on tests made in patients and animals, using both skin tests and a biological method in guinea-pigs, which enables one to recognize the immediate effects of the toxin and its neutralization. Further studies show that different clinical pictures of tuberculosis can be correlated with the results of skin tests made with toxin filtrates of cultures of tubercle bacilli. Both toxin content and susceptibility to infection can thus be measured in exposed or non-exposed persons and in patients showing different stages of the disease. In general, the method makes possible the differentiation of degrees of allergy, immunity, actual tuberculous disease, and susceptibility.[7 8 9]

LOCAL ALLERGIC AND IMMUNE REACTIONS TO TUBERCULOSIS IN ANIMALS TREATED WITH TUBERCULIN FRACTIONS AND TOXIN FILTRATES

Having noted the differences between a primary infection and a reinfection with tubercle bacilli in the experimental animal, it is possible to compare these with the sequence of events in animals previously treated with toxic filtrates and tuberculin fractions injected alone or in combination. If allergy and specific resistance to tubercle infection can be developed artificially with such materials, then a subsequent inoculation of tubercle bacilli should be followed by the reactions that are characteristic of a reinfection in a previously tuberculized animal. Such was found to be the case in the experiments. Normal guinea-pigs thus treated and inoculated into the skin with tubercle bacilli showed a prompt local reaction, an early development of nodule in an inflammatory zone, a lesion that came rapidly to a standstill and later tended to retrogress and heal. It was observed also that the regional lymph nodes did not show the rapid and pronounced enlargement peculiar to untreated control animals. In this instance early localization and focal involvement were accomplished in exactly the same manner as that caused by a previous inoculation with tubercle bacilli. However, when guinea-pigs had been previously injected with inactivated toxin filtrate the animals

behaved like untreated controls. In these the immediate reaction was absent, the nodule developed on an uninflamed background in one to two weeks; the lesion after this time advanced rapidly and approximated the condition seen in reinfected tuberculous animals at the time of reinoculation, and there was a later tendency to progression with softening and caseation. In all respects, regarding the local, regional and constitutional reactions as seen in the different groups of animals, the results justified the conclusion that the allergy phenomena were correlated with the development of specific resistance or immunity. Histopathologic studies confirmed the clinical findings.[8]

CONCLUSIONS

The immunity phenomena in tuberculosis seem to give an adequate explanation for the various clinical aspects of the disease. An understanding of these phenomena ought to guide our future investigations. From present knowledge the most promising leads suggest that attention might well be directed to phases of investigation related to a combined antitoxic and antibacterial immunity. Too much emphasis cannot be laid upon the importance of correlating experimental laboratory investigations with clinical data so that the results may become intelligible and give a broader understanding of the problem as a whole. From the point of view of ordinary present-day treatment the immunologic factors should serve as guides. Certainly a fibrotic, productive form of pulmonary tuberculosis must be managed differently from that of an exudative type.

As newer methods of study and treatment are developed, we are bound to meet with opposition not only on the part of our colleagues who are skeptical, perhaps healthily so or otherwise, but also from the laity who are usually misinformed. Objections are not always well founded, however, and we may run afoul of an obstacle similar to one recently reported by the health department of New Jersey in connection with the Schick test. An indignant mother wrote that she refused positively to permit either of her boys to take the Schick test. She had read the book and seen the play, and she did not approve of them.

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DISCUSSION

W. R. P. Clark, M. D. (516 Sutter Street, San Francisco)—I have been very much interested in the work Doctor Eberson is doing with fractions of tuberculin, particularly from the standpoint of the diagnosis of early active tuberculosis. At the present time the diagnosis of early active tuberculosis in the child is most difficult to make, and the present tuberculin reactions do not help us very much. A negative reaction is of more importance than a positive, for a positive reaction does not differentiate between active, latent or healed tuberculosis. Doctor Eberson believes that these fractions react only to a substance in the body produced by active tuberculosis and not to latent or healed lesions. If this be true this work is of inestimable value, and every effort should be made by those interested in tuberculosis to aid Doctor Eberson in this research work.

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William C. Voorsanger, M. D. (490 Post Street, San Francisco)—Doctor Eberson is to be greatly commended for his splendid effort in attempting to correlate laboratory and clinical findings. He forces us again to ask the question, what is tuberculin? Of course we know it is the product of the tubercle bacillus, but it is complex in nature, and Doctor Eberson may succeed in dividing it into its numerous component parts, thus giving us an index to either diagnosis or prognosis. It is not too much, perhaps, to hope that one toxin of the tubercle bacillus may prove to be more virulent than another. Clinically we already have demonstrated that certain types of tuberculosis are curative, that certain lesions wall off or absorb, that certain cavities disappear and, on the other hand, certain types will not improve. Doctor Eberson may be able to prove this observation, since he states that "both toxin content and susceptibility to infection can thus be measured in exposed or non-exposed persons and in patients showing different stages of the disease."

Doctor Eberson's reference to the inheritance factor in tuberculosis is interesting. If 30 per cent of a non-tuberculous group gave a history of tuberculosis in one or both parents and only 14 per cent of a tuberculous group, then rightly "incidence of the disease is inversely proportionate to the amount of parental infection." But if this observation is true, then our tuberculin tests showing a larger percentage positive in contacts than in non-contacts cannot be considered as indicating present or future active tuberculosis. Clinically we believe that the child of tuberculous parents has just as much chance of acquiring an immunity to tuberculosis as of becoming actively tuberculous.

The splendid results of Calmette and his associates in the immunization of children of tuberculous patients may be partly due to a natural immunity already acquired. In treating adult tuberculosis we see certain types yielding readily to almost any form of treatment. We say this is due to the resistance of the patient, or we say technically that the patient is generating enough antibodies. Doctor Eberson raises the question as to whether this phenomenon is antibacterial or antitoxic. Personally I believe it is antibacterial. I hope he can prove it is antitoxic. If the latter proves to be true we may yet find a toxin or antitoxin with therapeutic value. For the past forty-five years this question has engaged the best brains and laboratories of the world. We seem no nearer a solution than when Koch announced the discovery of his original tuberculin. Is it surprising therefore that many of us have lost hope in the possibility of any product of the

tubercle bacillus curing its own clinical manifestations and have gone over to the biochemical school, which believes that some simple extract or chemical will some day be discovered with definite specific properties against tuberculosis?

In the meantime the work of Doctor Eberson should be encouraged and supported because he seems to be attacking a very complicated subject in an intelligible manner, showing that clinical aspects of disease and "immunity phenomena" can be reconciled and explained.

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Chesley Bush, M. D. (Arroyo Sanatorium, Livermore)—We have been intensely interested in Doctor Eberson's work. Its first phase has been the standardization of tuberculin. Recent tests of various commercial tuberculins show that they vary in potency considerably. We may also presume that tuberculins made at different times by the same manufacturer may vary. Just what is the content of a gram of Koch's O. T. of commercial tuberculin? This variation in tuberculins is largely overlooked by clinical men who write on the tuberculin reaction.

We have noted in our work that tuberculin sensitivity varies from time to time—that children who react negatively to 0.1 mgms. of Koch's O. T. used intracutaneously may later react positively to the same dose, particularly if their general condition is improved. We have always used the same brand of tuberculin. Austrian recently pointed out that sensitization to tuberculin may vary considerably over a long period of time. Eberson's tuberculin, because of better standardization, may throw considerable light on our interpretations of the tuberculin reaction. Recently we have had the opportunity of using Eberson's tuberculin simultaneously with our usual commercial tuberculin, and have noted differences in the reaction which may have considerable meaning.

The other phases of Doctor Eberson's work are revolutionary. He states that he can sensitize animals without infection, and he believes that he has demonstrated a tubercle toxin. We hope that further work will substantiate this. If so, there will be no limit to the possibilities that the future may have in store for a specific treatment of tuberculosis. We believe that this work should undergo an intensive investigation by all available facilities to substantiate a tremendously important "lead" in research work on tuberculosis.

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Karl F. Meyer, Ph. D. (Hooper Foundation for Medical Research, San Francisco)—Doctor Eberson has reviewed from a clinical point of view the most recent contributions to the study of tuberculosis. His presentation clearly shows the complexity of the problem which still confronts us. There are many phases which could be discussed, but I will confine myself in my remarks to the question of the virulence of the tubercle bacillus and the nature of the immunity reactions. It is generally believed that the tubercle bacillus possesses a constant virulence. (This term is used with all the restrictions which have been placed upon it by Topley.) However, many years ago I worked with a human strain isolated from an abdominal lymph node. By passing it through twenty-four series of guinea-pigs it exhibited a constant and extraordinary virulence. Guinea-pigs inoculated subcutaneously died regularly within eighteen to twenty-two days. A somewhat similar observation has recently been reported by Silberschmidt, who studied for a period of three and a half years a human strain of tubercle bacilli through sixty-seven passages. The guinea-pigs injected with the strain invariably succumbed within twelve to fourteen days. Silberschmidt's strain was not only virulent for guinea-pigs, but also for mice and rabbits on intravenous and intraperitoneal injection. In my opinion these observations indicate that the virulence or the invasive properties of the tubercle bacillus may be a variable factor. Aside from the well-known differences in susceptibility of the host it is always worth while to consider the virulence of the tubercle bacillus and to conduct virulence tests much more frequently than has been done in the past. The nature of the tuberculin reaction is still under consideration. It is probably not an anaphylactic phenomenon although a protein-like substance acts as the inciting factor. There is every indication that the union of this protein-like substance with the tuberculous tissue liberates a toxin which is responsible for the febrile and the focal reactions. *If the same toxin is produced in the culture tube, still remains an open question although the experiments of Doctor Eberson would indicate such a product had been produced.* The immunity against tuberculosis is generally considered to be cellular, and it would be most interesting if humoral factors could be demonstrated. Leukocytes do not digest tubercle bacilli since they possess no lipases; but they transport the organisms to tissues where they can be handled. If any toxin production occurs it must be in these areas and their antitoxin content should be high. A number of interesting laboratory experiments suggest themselves.

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Doctor Eberson (closing)—In closing, it might be emphasized that the experimental immunologic points brought out in this paper are really not so revolutionary as some of the discussions have intimated. Not infrequently the most revolutionary discoveries are not at all revolutionary, but merely reinterpretations of old and well-known facts that have hitherto lacked proper emphasis because of failure to correlate the observed facts.

The clinical and laboratory investigations that have been hinted at here, support, I believe, a rational conception of the phenomena of tuberculous disease in terms of immunology against a background of diverse clinical pictures. Clinical trial on a comprehensive scale has shown, moreover, that although complicated chemical analyses of the tubercle bacillus or tuberculins may have some theoretical interest, the best test of a diagnostic agent is the clinical test. In my experience a certain preparation of tuberculin and a toxic filtrate of the tubercle bacillus have given results that appear to be of clinical value not only as definite information, but also as leads for further research. These are the facts obtained by clinical and laboratory experiment, and as such they are presented.

Referring specifically to Doctor Voorsanger's comment on antitoxic and antibacterial immunity in tuberculosis, I feel that one ought not exclude any one of these factors. Indeed the major part is probably played by antitoxic substances insofar as antibacterial resistance or any type of bodily immunity is definitely checkmated, if not entirely nullified, in the presence of a tuberculous toxemia.

EXERCISES FOR SCHOOL CHILDREN WITH HEART DISEASE*

By Sven Lokrantz, M. D.
Los Angeles

THERE are about eight thousand children with heart defects attending the Los Angeles city schools. What has been done? What can be done? What should be done for these children? These and similar questions are constantly coming up before the Health and Corrective Physical Education Department of the Los Angeles city schools which has charge of the preventive work and medical supervision of these children.

A classification of these children has been made throughout the schools with more or less routine and accuracy. The grouping is as follows:

Group 1—*Children with Functional Disturbances*—These children are permitted to take part in athletics, with the exception of strenuous activities and competitive games.

Group 2—*Children with Minor Lesions*—These chil-

* Read before the Pediatric Section, California Medical Association, at its Fifty-Sixth Annual Session, April 25-28, 1927.

dren take part in limited and specified athletic events and corrective games.

GROUP 3—*Children with Organic Heart Lesions, Well Compensated*—These children are assigned to corrective classes only. They may also take part in corrective games. Rest is also prescribed by physicians.

GROUP 4—*Children with Organic Heart Lesions Where Compensation Is Poor*—Rest is the major program for these children.

The Group 1 children with the functional disturbance, have their athletic activities supervised and checked by the school physician. They cannot take part, for example, in competitive races, basketball, football, or baseball.

The Group 2 children with the minor lesions are allowed by the school physician to take part in certain exercises in which no extra strain is put on the heart and where the games are very carefully supervised. For example: golf and certain formal exercises. These children are also given special exercises in the corrective gymnasiums. Exercises are given them that will tend to enlarge their chest capacity and indirectly strengthen the heart muscles.

The Group 3 children with definite organic lesions, well compensated, are assigned to the corrective physical education classes. They also take part in corrective games.

All exercises given the children vary in degree and amount of exertion. The exercise groups are divided into different sections: (1) the passive; (2) the active; (3) the imaginary passive; (4) the imaginary active; (5) the imaginary assistive; (6) the imaginary resistive; (7) second and third degree active. For example, a child with minor lesions might be given second and third degree active exercises whereas a child with organic lesions might be given first degree active exercises, resistive and passive exercises.

To the children of Group 4, with organic lesions where compensation is poor, only passive and assistive exercises are given, with rest before and after.

Exercise tolerance tests are given once a week in a few schools to test the effect of the exercises. The vital capacity and the pulse is taken to check the improvement in the chest capacity and the pulmonary circulation. Special care is taken that only those exercises are given that will improve the circulation in the veins and improve respiration, thereby decreasing the work of the heart and increasing the amount of oxygen intake.

All exercises, if within a certain limit, tend to exercise the muscle of the heart in a reflex way. Any movement which will in any way interfere with respiration or circulation in the veins is avoided. For instance, hangings, active trunk rolling, forward-lying raising, and sit-lying raising. Chest lifting and respiratory exercises are first to be given in any schedules designed to strengthen the heart muscle.

Herewith are given as examples four schedules, each one assigned to the four groups previously referred to.

GROUP 1—FOR CHILDREN WITH FUNCTIONAL DISTURBANCES

1. Stride standing, arm carrying forward, upward and forward or sideward, downward, three times.
2. Stride standing, arm rolling, two times.
3. Stride standing, head rolling, three times.
4. Deep knee bending, once.
5. Neck firm, side bending, right and left, three times.
6. Hip firm, trunk twisting, right and left, three times.
7. Stride standing, shoulder rotation, deep breathing, three times.
8. Rest on back.

Schedule of exercises to be repeated every day.
Exercise tolerance test, once a week.

GROUP 2—FOR CHILDREN WITH MINOR HEART LESIONS

1. Stride standing, arm carrying forward, upward and forward or sideward, downward, three times.
2. Hip firm, trunk rolling in a small circle, three times.
3. Hip firm, knee flexion and extension, once, half knee bending.
4. Stride standing, forearm flexion and extension, seven times.
5. Stride standing, arm flying, slow speed, three times.
6. Arm forward bending, arm stretching sideward and deep breathing, return.
7. Arm carrying forward, upward and forward or sideward, downward, three times.
8. Rest on back before and after for ten minutes.

Exercise tolerance test, once a week.

GROUP 3—FOR CHILDREN WITH ORGANIC LESIONS WELL COMPENSATED

1. Rest on back fifteen minutes.
2. Lying, arm carrying forward, upward and forward or sideward downward, seven times with deep breathing, imaginary resistive.
3. Lying, knee separation and closing, imaginary resistive.
4. Sitting, arm rolling, three times.
5. Sitting, double arm flexion and extension with deep breathing.
6. Sitting, head rolling, three times.
7. Sitting, arm carrying forward and backward, three times.
8. Standing, hip firm, side bending right and left, three times.
9. Arm carrying forward, upward and outward, seven times with deep breathing.
10. Rest on back ten minutes.

Exercise tolerance test, once a week.

GROUP 4—FOR CHILDREN WITH ORGANIC LESIONS WITH POOR COMPENSATION

1. Rest on back fifteen minutes.
2. Lying arm carrying forward, upward sideward, and downward, slowly, with deep breathing, four times.
3. Sitting, chest lifting.
4. Lying, forearm flexion and extension with deep breathing, imaginary assistive.
5. Lying, deep breathing (with air in motion, temperature not over 66 degrees Fahrenheit).
6. Rest on back twenty minutes.

The heart may also be stimulated and strengthened by tapotement of the back, which should be done under a physician's supervision. A light general massage will assist the venous flow and might be done by parents under a physician's directions. However, there are heart conditions where mas-

sage should not be given; for instance, those with much dyspnea, angina pectoris, etc.

The purpose of the corrective exercises and rest periods is not to direct the child's medical treatment, but to outline a protective and preventive regimen with regard to physical development. The heart muscle can be exercised with due care in the same way as any other muscle in the body. Medical treatment is left altogether to the discretion of the family physician or the clinic doctor. All questionable heart diseases in children are passed upon by the consulting medical board.

There are eight members of this consulting board who meet once a week to aid in diagnosis and outlining the preventive regimen with regard to general hygiene and nutrition, insofar as these concern the relation of children to the school work. The board does not direct a child's medical treatment in any way. By this plan great benefit can be accomplished, not only to the child, but also for the school department. The consulting board aims to provide that no child with heart disease shall have its heart reserve taxed or broken. This board also passes upon bulletins which give information as to the general hygiene and the activities of these children in school and at home. It has at its disposal a central place for meeting, sufficient equipment, two stenographers, one social worker, and, by way of instruments, x-ray and fluoroscope, and one cardiograph. It also has the cooperation of the school nurses, school physicians, corrective teachers, private physicians, and parents.

Eight years ago I made a special investigation dealing with the influence of worry and excitement on school children suffering with heart disease, and I found that in such children there is a certain amount of nervous instability. They are extremely sensitive to the remarks of the teacher and their fellow students. Although I have no definite statistics, I found that children with heart defects are injured by school work when teachers are too strict. In such cases leniency is now shown and the child is asked the first question so that the worry of expectancy is avoided.

Arrangements have been made in the city schools of Los Angeles that children suffering with heart disease may come late to class. Sometimes the rest periods are very short, and it would be difficult for them to reach the classroom without hurry. In most schools they are given an opportunity for rest in the middle of the day, upon the recommendation of the family doctor, the school doctor, or the consulting board.

In regard to foci of infection, provision for eradication of foci has been made, through inspections by school doctors and nurses, who report findings to the parents, to be transmitted to the family physician.

For the past eight years an attempt has been made to work out some definite regimen for the protection and prevention of heart defects among the school children of Los Angeles, yet the work is still in its beginning. There is much room for improvement in order to place it on a more scientific basis. It is aimed that this preventive regimen should not interfere in any way with the private physician's medical supervision of the child. From a physical point of view, Los Angeles schools are probably doing more for the prevention and general hygiene of school children with heart disease than is done in most other cities. Los Angeles, however, has no classified educational cardiac classes. I have not enough information to know whether or not such classes should be recommended.

Today many communities in America are beginning to realize the need of special plans for the education of children suffering from heart disease. However, since communities differ greatly, various and flexible methods to be used in meeting human and social problems are needed. The solution of the problem of the education and preventive care for children suffering from heart disease requires the cooperation of the child, the parent, the doctor, and the teacher.

358 South Citrus Avenue.

DISCUSSION

Henry Lissner, M. D. (318 West Ninth Street, Los Angeles)—Attention was called to the benefit to be derived by exercise in heart conditions by Schott of Nauheim and Thorne in America. Those investigators gave very valuable indications for controlling the amount of exercise to be allowed individuals with heart trouble; and they were probably the first with their "resistance movements" to call attention to the value of exercise in heart disease.

Doctor Lokrantz has carried out the idea of properly regulated, supervised and controlled exercise in school children with heart disease even further than the original methods advocated by Schott.

Intimate knowledge of the results of his system of exercises, and his grouping of heart disease into the four definite classifications has convinced me that his methods work to the great advantage of the patients. It insures and prevents the overexercising of hearts which could not stand the tax of undue strain, either in the form of so-called ordinary gymnasium work or in the more strenuous demands made upon them in competitive athletics such as track, football.

Obviously a careful physical examination is necessary in order to place a suspected heart into any of the four classes enumerated. It is also very essential to adjust the child to its new method of living as indicated by the necessities of each individual. The psychological attitude of the child toward its new life is one of the most important difficulties with which we have to contend. Taking a boy with an overtaxed heart out of the football or track team in which he is a star and making him understand that what you are doing is necessary for his future well-being and development in order to secure his cooperation, requires more tact and diplomacy sometimes than one is called upon to use in settling the affairs of state or nation.

Exercise alone is not the only prerequisite for the rehabilitation of an injured heart muscle. With it one must have the advantages offered by a well-trained social service, and dietetic department. These agencies look after the patient from an entirely different angle and aid in keeping him informed that he has an obligation to himself to fulfill, and they act as an intermediary between the individual and the heart center. It makes for an easier follow-up system, in which the benefits of progress become apparent or the need for change is suggested.

In heart cases other than those in which there is a school problem involved, the same classification and

exercises may apply, and the factors of family environment and nutrition are just as important.

Let us not raise our voice in praise of indiscriminate exercise for the heart sufferer; but rather let us keep in mind the patient's need and advocate the particular exercise fitted to the individual heart lesion, and then control their administration.

❊

William J. Kerr, M. D. (University of California Medical School, San Francisco)—It has been of great interest to learn of the work which is being done in the Los Angeles public schools for the cardiac cripple. The cardiac clinic of the schools, which has been well organized to follow up those who are found to be suffering from cardiac disturbances, has had a most progressive program and it is showing results. The care of children with various disturbances into groups which may be more rationally handled is a step in the right direction.

It is my feeling that children who fall into Group 1 are probably not suffering from true cardiac disease and that many of the disturbances are connected with the sympathetic nervous system or the central nervous system. In this particular group it is just as necessary to shield from nervous strain and emotional disturbances as it is to protect the children from the standpoint of the heart. I also believe that in many other cardiac conditions the nervous system plays quite a rôle in the production of some of the symptoms. The use of graded exercises for those who are suffering from actual cardiac disease and those who have a poor general circulatory tone is of undoubted value.

While there are some who hesitate to segregate children who have cardiac diseases, and single them out from the remainder of the students, I have no doubt that we may prolong the lives of many children by handling them in a proper manner. I doubt, however, the advisability of having special classes for cardiac cripples because it would mean more or less a duplication of the entire educational system. The entire percentage of those who have cardiac disease is so small in the entire school that it would be economically unsound to go to such an extreme in their care. However, leeway may be given them wherever possible, in the arrangement of courses and situation of classrooms, and with certain allowances for tardiness at classes.

It is very gratifying to see the way that Doctor Lokrantz has developed his plan for taking care of the cardiac cripple in all directions, and I am sure much has already been accomplished in the community by this cooperative work.

❊

Doctor Lokrantz (closing)—I am very pleased to know that both Doctor Lissner and Doctor Kerr are in favor of a school health program for children with heart disease. I fully realize that our program in Los Angeles needs further adjustment and should be placed on a more scientific basis. I also fully accept and realize the importance of the point that Doctor Lissner brought up, namely, that exercise alone is not the only prerequisite in rehabilitation of an injured heart muscle.

I was interested to get Doctor Kerr's reaction in reference to special educational classes for cardiac cripples. This has been tried out in the schools of New York, but was discontinued for various reasons.

It is my intention to freely consult with the Advisory Heart Board of the Board of Education before taking any further steps in the preventive program for children with heart disease in the city schools of Los Angeles.

INDICATION FOR BLOOD TRANSFUSIONS*

By LeRoy Brooks, M. D.
San Francisco

Discussion *by Walter V. Brem, M. D., Los Angeles; John Francis Cowan, M. D., San Francisco.*

THIS paper is presented with the hope of stimulating a discussion which will result in the more frequent use of blood transfusions. Time will not permit a discussion on this occasion of the details of the many indications.

In the writer's opinion there is a lack of appreciation by some members of the profession of the results obtained by the judicious use of blood. There are others who are unduly afraid of transfusion because they have seen or heard of some untoward reaction. Practically all such reactions are due to poor technique either in the grouping and cross-agglutination tests, or in making the transfer of blood from the donor to the recipient.

PRELIMINARY SAFEGUARDS

Before doing a transfusion, with the possible exception of an extreme emergency (when a universal donor may be used), both patient and donor should be grouped, using fresh serum that has been properly preserved and not more than six weeks old. The cross-agglutination test should be done in addition, as one test checks the other, and too much precaution cannot be exercised in selecting a donor.

In spite of all tests having been properly done there will be reactions in rare instances, but the reactions that are due to incompatibility occur immediately upon the giving of a few cc. of blood, and if caution is exercised the injection can be stopped before harm is done. In over seven hundred transfusions, I have had only four alarming reactions: two in which hemolysis occurred, one urticaria, and one anaphylactoid reaction, probably caused by using a donor who had been used for the same patient about three weeks previously. The reactions with hemolysis both occurred in the same patient—a Type 2, and the blood was compatible according to grouping and cross-agglutination tests.

All my transfusions have been of unmodified blood by a technique which was published in this journal, January, 1926. If chemicals are added to the blood to prevent coagulation, or if too much time is allowed to elapse between the collecting and injecting of whole blood, more reactions will occur. Blood in the first stages of coagulation is toxic even though still unclotted.

In order to be correctly understood I wish to state that the rise of one or two degrees of temperature on the day of or on the day following a transfusion is not considered a harmful reaction. I have observed no chills of the type which could be considered dangerous, even to a patient in the most critical condition. In a few instances the patients have complained of feeling chilly. I have not noted a single chill of the type which causes

* Read before the Fifty-Sixth Annual Session of the California Medical Association, Section on Surgery, April 25-28, 1927.

a rattling of the teeth, shaking of the bed, or which requires hot water bottles and more covers. As a preventive, we make an effort to eliminate the psychic element of suggestion by never speaking to, or in the presence of, the patient, of the possibility of a chill following the transfusion. We believe the absence of chills and harmful reactions have been due to rigid attention to the details of the laboratory tests in selecting donors and the rapidity with which the blood has been transferred from donor to patient.

SOME INDICATIONS FOR TRANSFUSIONS

In massive hemorrhages that cannot be stopped by mechanical means, one not infrequently is confronted with the objection by physicians that transfusion raises the blood pressure and causes further or worse bleeding. This objection is not valid because the blood pressure is raised but little by transfusion, and the increase in coagulability of the blood more than offsets the rise in pressure—to say nothing of the value to the patient's tissues by the replenishing of the lost blood.

Generally speaking, any patient with secondary anemia having hemoglobin of 40 per cent or lower will be given a better chance of recovery if transfused. In medical patients one might find exceptions to this statement, as in certain of the blood dyscrasias. The acute leukemias are not benefited and sometimes probably harmed by transfusion. The chronic forms may be benefited temporarily or may need transfusion to prepare for forced surgery or to check hemorrhage after a needed operation. Hemophiliacs are benefited temporarily only, but transfusion makes continuation of life possible. Patients with Hodgkin's disease are benefited only temporarily by transfusion. On the other hand transfusion of 100 to 200 cc. whole blood is specific for hemorrhage in the newborn; sometimes more than one transfusion is needed, but I have never seen a case in which the bleeding could not be stopped. Transfusion with splenectomy is a cure for chronic purpura and good results follow the giving of whole blood in acute purpuras.

The primary anemias may be divided into two groups as to whether transfusion is or is not indicated. In the case in which symptoms of cord changes, etc., dominate the picture, transfusions are ill-advised. But certainly the patients in whom anemia is the predominant symptom, are made more comfortable by transfusion. If used, the hemoglobin should be kept up to 60 per cent as a minimum in order that the patient may live as an animal, and not simply exist as a vegetable. I believe better results are obtained by the transfusion of at least 500 cc. each time than by the more frequent transfusion of smaller amounts.

One of the most valuable procedures at the command of the pediatrician is transfusion. The results obtained in inanition, malnutrition, in secondary anemia from causes such as chronic gastro-intestinal infections, diarrheas, are just short of miraculous. Good results are obtained also with secondary anemia in chronic bronchitis and pneumonias, especially of the unresolved type. The results which I have seen from transfusion in acute blood-stream infections of the fulminating type where anemia was not present have been disappointing. In intestinal obstruction or in burns where toxemia threatens to overcome the patient, lives may be saved by removing as much toxin as is possible from the gastro-intestinal tract or from the area of burned tissue by surgical measures, following this by bleeding the patient almost to depletion and transfusing an equal volume of fresh blood. Obviously the problem here is a different one from that encountered in an acute fulminating septicemia. In the two examples just cited the body develops no antibodies, and the excess toxin is simply removed; while in septicemia the source of supply of toxin cannot be controlled, and to bleed the patient may only remove valuable specific antibodies.

In secondary anemia, both in adults and in children, following septicemia, mastoiditis, sinus infections, osteomyelitis, peritonitis, empyema, lung abscess, etc., the results are most gratifying. Many of these patients even after they have overcome the severity of the infection have little or no appetite, little strength and in general are doing badly. By transfusion their convalescence is shortened, complications are fewer, and the recovery made more certain.

The material for observation furnished by the World War demonstrated beyond all question that blood has no rival fluid in the treatment of shock. All other fluids quickly pass through the injured walls of the capillaries. It has been authoritatively stated that thousands of lives could have been saved if sufficient blood for transfusion had been available, not alone for patients with shock, but for those suffering from chronic infections as well.

In civil practice the greatest usefulness for transfusion is found in preoperative preparation of patients and postoperative treatment of chronic infections. Many patients who must be operated upon are lost following surgery, and of such many could be saved were blood transfused before or after operation, or sometimes both. The greater the number of transfusions one does in surgical patients the more is this fact appreciated. This is especially true when dealing with people past middle life, with such operations as resection of rectum or stomach, hysterectomy, prostatectomy, toxic goiter, chest surgery, etc. In this class of patients one should not necessarily be guided by the degree of anemia as an indication for the giving of blood. If before operation, after all tests and examinations have been completed, and there is a doubtful surgical risk, a transfusion should be done before operation and a donor selected for another transfusion after the operation, if necessary. As has been said, "No one dare any longer defend himself for operating upon an anemic patient without transfusion."

In conclusion I wish to emphasize again that for such enthusiasm for blood transfusion to be justified, every possible precaution must be exercised in selecting donors and unmodified blood

must be transferred with dispatch by one of the well-standardized techniques of whole blood transfusion.

490 Post Street.

DISCUSSION

Walter V. Brem, M. D. (523 West Sixth Street, Los Angeles)—The transfusions of blood, made safe by the work of Jansky and Moss, is one of the most important additions during the present century to our therapeutic armamentarium. After acute hemorrhage it is often life-saving, and more frequently it hastens and makes safe posthemorrhagic convalescence. In the treatment of chronic secondary anemias it is likewise very helpful, and in the prevention and treatment of postoperative shock. We have not had great success in the treatment of blood dyscrasias, though there is frequently temporary benefit. Since the introduction of liver diet in the treatment of pernicious anemia, its use in that disease will be much limited hereafter. Our results in infectious diseases, except in combating anemia, have not been encouraging. It is specific in the treatment of hemorrhage of the newborn.

We agree with Doctor Brooks in that the whole untreated blood should be transfused, and that the method should involve as little handling as possible. We ourselves have used a slightly modified Lindemann syringe method in over four thousand transfusions, and have found it very satisfactory.

Doctor Brooks rightly calls attention to the extreme care that should be exercised in grouping bloods, as the group reactions are very alarming and dangerous. Anaphylactoid reactions are rare, but do occur occasionally. We do not believe that they are the result of previous transfusions, even with the same donor. The ordinary febrile reaction, with or without chill, is rather common, having occurred in about 10 per cent of our transfusions. However, we have included as reactions temperature rises of one degree accompanied by slight malaise. Most of these reactions are inconsequential; they do not interfere with the beneficial results or cause great discomfort to the patient. Occasionally, however, the reaction is severe, and might be dangerous in the case of a very sick patient. The severe reactions are most apt to occur in febrile cases.

We have known no way to avoid these reactions, but recently we found that the use of fasting donors prevented them in a patient who had had repeated severe reactions previously. The donors fasted overnight and were used before they had eaten breakfast. Probably a non-protein meal would not be contraindicated. The case referred to will be reported soon in the *American Journal of the Medical Sciences.*

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John F. Cowan, M. D. (490 Post Street, San Francisco)—Blood transfusion has become a very definite surgical practice, and has an established place in the treatment of certain medical and surgical diseases.

It has been my privilege to see the development of blood transfusion from the tedious method of direct vessel suture, through the use of the cannula, and syringes to the Kimpton tube and other modern methods. By this slow development its technical difficulties have been overcome.

Yet, as Doctor Brooks points out, there are certain and very important precautions to be observed in blood transfusion.

Too much caution cannot be exercised in the selection of a donor.

Transfusion without grouping is a dangerous procedure, while with modern methods it is safe and simple. If the bloods are not tested and found compatible, there is a 30 per cent risk of hemolysis occurring in the recipient and the reaction may prove fatal in about 5 per cent. It is generally believed that persons belonging to Group IV (Moss) are universal donors and that their red cells are not agglutinated or hemolyzed by the serum of any other group. It is now known that this statement is not reliable, and that the only safe method of selecting a donor is to test the blood against the recipient in addition to grouping. This is particularly true when dealing with primary blood diseases, as pernicious anemia. In these cases the bloods should be checked by all known methods before each transfusion.

A person with pernicious anemia may not react to transfusion at one time, but many have a very serious reaction at a later transfusion with blood from the same donor. I believe that reactions are due to errors in technique in the majority of instances. In the use of whole blood, rapidity of transfusion is of the utmost importance, for, as Doctor Brooks points out, blood in the first stages of coagulation is toxic even though it is still unclotted.

In the citrate method most of the reactions are due to the use of impure citrate.

If one uses chemically pure citrate, freshly prepared and used within twenty-four hours, reaction will practically never occur.

The reaction following the citrate method is comparable to the reaction following the administration of intravenous glucose solution. With the use of buffer solution, which neutralizes any free lactic acid present, our reactions have disappeared.

Personally I prefer the use of whole blood.

In my experience the results of transfusion in cases of severe primary hemorrhage have been most satisfactory.

In a case of subfacial hematoma of the thigh in a hemophiliac the bleeding ceased after one transfusion.

In secondary hemorrhage, due to gastric and duodenal ulcers, the condition of patients has been greatly improved by transfusion, and the administration of 500 cc. of whole blood has not been followed by recurrence of bleeding.

I have not had any permanent beneficial results in cases of septicemia.

In practically all abdominal cases in which the hemoglobin is 35 per cent or lower, I give preoperative transfusion.

If transfusion is indicated I believe that it should be done before operation.

If postoperative transfusion is considered in a patient who has had ether anesthesia, the patient should be given intravenous glucose solution until all ether has been eliminated.

With modern methods of blood testing and grouping, and with the rapid administration of whole blood, the mortality following major operations has been greatly reduced.

❊

Doctor Brooks (closing)—I wish to thank Doctors Brem and Cowan for their discussion.

I want to emphasize again the great value of transfusion in major surgery for the doubtful risk. Since I am equipped to give transfusions without much difficulty I have noticed that I give them in the doubtful risks more frequently than formerly. When one is in doubt as to whether or not a transfusion should be given it is better to give it. There is no other procedure known to me which is as valuable in keeping the mortality rate low in general surgery, and I am convinced that it is not used frequently enough.

Yates and Raine of Milwaukee recently did some experimental work which showed that the oxygen-carrying power of the blood in a given patient is decreased from 10 to 25 per cent following anesthesia. This inefficiency in the oxygen-carrying power of the blood develops between one and twenty-four hours after the anesthesia. The return to normal requires from five to ten days. This is possibly one of the reasons why such remarkably good results follow transfusions after major surgical procedures in patients who are only slightly anemic. The difference in the mortality rate with and without transfusions in doubtful cases is very striking.

There are reports in the literature that the group of an individual changes following certain diets, following anesthesias, etc. Personally I do not believe that the groups ever change; in infancy they are often

not well established, but once established, I have never had the experience of having the group change. I believe the explanation of such changes will be found in errors in the laboratory work from inactive sera or imperfect technique. I frequently give transfusions immediately following operations for patients who are still unconscious from the anesthetic and have never experienced untoward effects. As a precaution, however, before each transfusion, the grouping of both the patient and the donor, as well as the cross-agglutination tests, is carried out.

CORONARY ARTERY DISEASE—AN ELECTROCARDIOGRAPHIC STUDY*

By P. Berman, M. D.
AND
V. R. Mason, M. D.
Los Angeles

Discussion *by James B. Herrick, M. D., Chicago; William J. Kerr, M.D., San Francisco.*

CORONARY artery disease, because of its historical interest and its relation to angina pectoris, has been the subject of numerous reports throughout a long period of years. The older textbooks of medicine, published since the time of Jenner, John Hunter, and Heberden, have all contained eloquent descriptions of the major symptoms of angina of the chest. The more recent articles of Herrick [1 2] and Benson,[3] and the monographs of Mackenzie [5] and Allbutt,[4] have presented in detail the historical, clinical and pathological aspects of coronary artery obstruction and occlusion. Largely dependent on the clinical observations of American physicians the symptomatology of coronary artery disease has been so clearly defined that the diagnosis is now made and confirmed with considerable frequency.

THE CARDIOGRAM IN DIAGNOSIS

The aid brought by the electrocardiogram in the diagnosis of coronary artery disease is of recent date. Eppinger and Rothberger [6] first published records made by the hearts of dogs in which the muscle at the base of the left ventricle had been injured by the injection of a solution of silver nitrate. Smith,[7] a short time later, produced remarkable electrocardiograms in dogs by ligation of branches of the left coronary artery. Subsequently Pardee [8 9] published electrocardiograms made during an attack of angina pectoris and assumed that in his patient injury of the wall of the left ventricle by occlusion of a coronary artery caused the peculiar form of the electrocardiogram. The tracings published by each of these observers have essential characteristics of striking resemblance. In a recent report Pardee [9] adequately correlated and described these abnormal electrocardiograms and gave the name "coronary T wave" to the peculiar alteration of the terminal ventricular complex often associated with the coronary artery disease.

Willius [10] some years ago, in a purely statistical study, pointed out the grave prognosis associated with significant inversion of the T wave. Although he did not differentiate between simple inversion of the T wave and the characteristic coronary wave described by Pardee, he did state his belief that significant inversion of the terminal ventricular complex was produced, in all probability, by vascular degeneration of the obliterative type with involvement of the heart muscle. We may assume, therefore, that both significant inversion of the T wave and the peculiar coronary T wave are, in all probability, produced by myocardial derangements or degenerations dependent on occlusion of large or small branches of the coronary arteries or on varying degrees of obstruction of these arteries. In a minimal number of instances localized myocardial damage might result from other causes than vascular lesions, but except when experimentally produced, few such cases have been reported.

We have been interested in the specificity of the coronary T wave as described by Pardee, and for this study we have chosen all electrocardiograms which have shown a downward, sharply peaked T wave with an upward convexity of the S-T or R-T interval in all or any leads except lead III alone. When characteristic and marked in lead III alone, we are convinced of its serious significance if associated with other evidence of myocardial damage, but our post-mortem material is as yet too scanty to be used as evidence,

* From the Medical Service of the Los Angeles General Hospital.

Table 1—*Eight Cases. Diagnosis of Occlusion of Coronary Artery made Before Death*

Name	Age	Sex	Blood Pressure	Heart Size	Symptoms	Electro Cardiogram	Wa R	Autopsy
L. D.....	48	F		Normal	Vomiting, shock and pain for two days.	See Fig. 4	0	Occlusion of left coronary. Infarction of myocardium.
C. H.....	69	M	150/70	Enlarged	Pain, vomiting, dyspnea, shock.	See Fig. 2	0	Occlusion of left coronary. Infarction of myocardium.
H. H.....	82	M		480 Gms.	Pain, heart failure.	Typical	0	Mural thrombos of left ventricle with embolism of left coronary.
H. E.....	59	M	110/76	3.9-10.6 Orthodiagram	Pain, dyspnea.	See Fig. 3	0	Thrombosis left coronary.
G. B.....	49	M	252/144	Large	Pain, dyspnea, heart failure.	Typical	0	Thrombosis left coronary.
F. W.....	40	F	190/90	8.6 10.8	No pain. Gradual heart failure. Aortic insufficiency.	Typical	0	Occlusion of left coronary.
W. P.....	66	M		Enlarged	Two attacks of angina with death in last one.	See Fig. 1	0	Old and fresh myocardial infarction. Left coronary occlusion.
E. M.....	72	F	158/90	Large	Frequent anginal pain.	See Fig. 6	0	Occlusion of left coronary artery.

Note—In all figures abscissael measure 10-4 volts and ordinates 0.04 seconds.

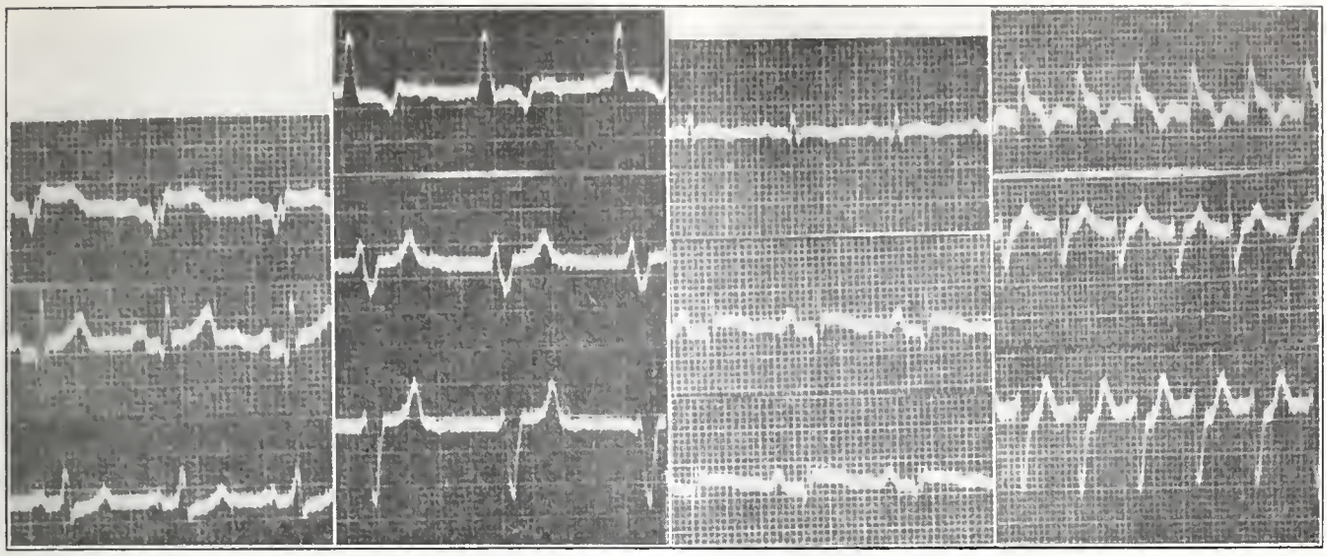

Fig. 1 Fig. 2 Fig. 3 Fig. 4

Figs. 1, 2, 3, and 4. Electrocardiograms taken during fatal attacks of angina pectoris. At autopsy an infarction of the myocardium from occlusion of a branch of the left coronary artery was found in each case. These figures show the characteristic changes of the T wave in recent infarctions.

and such instances were therefore not included in this report.

GROUPING OF THE ELECTROCARDIOGRAM STUDIES

The electrocardiograms were selected from approximately a thousand made at the Los Angeles General Hospital during the past year. They were then correlated with the clinical records in each instance and with the post-mortem studies in those cases which came to autopsy.

Statistics compiled in this way are of no value in demonstrating the interesting relationship between coronary artery disease and angina pectoris or heart failure. They are of value, we believe, in demonstrating the diagnostic value of the coronary T wave of the electrocardiogram.

The completed records fell readily into four groups, which will be discussed *seriatim*.

Group I: This group consists of eight patients in whom the diagnosis of occlusion of a coronary artery was made before death by clinical and electrocardiographic study and was confirmed by postmortem examination. In each instance the electrocardiogram (Figs. 1, 2, 3, 4), showed the

TABLE 2—*Eighteen Cases. Electrocardiograms, Histories, and Clinical Studies, All Compatible with Coronary Artery Disease Diagnosis*

Name	Age	Sex	Blood Pressure	Heart Size	Symptoms	Wassermann	Electrocardiogram
D. C.	65	F	212/110	Enlarged	Dyspnea. Edema; attacks of dizziness.	0	Fig. 5.
M. W.	59	M		Very large	Typical anginal attacks. Heart failure. Edema.	0	Broad Q. R. S. with slurring; coronary T leads I and II.
W. W.	58	M	110/84	8 - 13	Dyspnea; sudden attacks of weakness and tightness of chest.	0	Abnormal Q. R. S.; atrial fibrillation. Coronary T leads I, II, III.
F. P.	53	M	120/80	Normal	Attacks of angina for ten years.	0	Left ventricular preponderance abnormal Q. R. S. Coronary T leads III and T.
J. S.	50	F	155/100	Normal?	Frequent dizzy spells.	0	Left ventricular preponderance coronary T leads T, II.
T. B.	70	M	130/100	7 - 12	Marked cardiac asthma with anginal attacks.	0	Abnormal Q. R. S. Coronary T leads I and II.
L. L.	71	M	170/100	6.9 8.7	Anginal pain for many years.	0	Coronary T wave. Leads T. Very light upright T in lead III.
J. W.	41	F	110/78	5.4 7	Anginal pain.	0	See Fig. 7.
J. T.	64	M	136/80	5.3 13.8	Anginal pain.	0	Coronary T leads I and II.
A. S.	40	M	160/100	5.6 12.2	Anginal attack with pericardial friction. Death.	0	Coronary T leads I and II.
J. A.	54	F	250/130	Large	Attacks of weakness.	0	Coronary T leads I and II. Atrial fibrillation.
H. B.	52	M	212/150	Large	Anginal pain.	0	Coronary T leads I and II. Left ventricular preponderance.
M. H.	55	M	142/90	Large	Many anginal attacks.	0	Coronary T leads I and II; very high upright T in lead III.
M. S.	63	F	180/100	4.7 10.3	Many anginal attacks.	0	Coronary T leads I and II. Left ventricular preponderance.
N. G.	31	F	90/60	Normal	Attacks of breathlessness.	0	Coronary T leads II and III.
R. F.	54	F	200/100	Large	Anginal pain.	0	Coronary T leads I and II. Left ventricular preponderance.
G. S.	60	M	100/75	7.4 - 13.9	Many sudden attacks of dyspnea.	0	Coronary T leads II and I. Very high upright T in lead III. Left ventricular preponderance.
C. K.	63	M		Large	Many anginal attacks.	0	Coronary T leads II and I. Very high upright T in lead III. Left ventricular preponderance.

characteristic abnormalities first described by Pardee in occlusion of a coronary artery in man. These patients all suffered from anginal pain (Table 1), and some had had numerous attacks of precordial pain. One patient was studied in two severe attacks of pain, and at autopsy a healed and a recent infarction of the left ventricle was found. Another patient with a history of a severe anginal attack previously was found to have an old mural thrombus in the left ventricle over an infarction and a recent embolism of the left coronary artery by a clot which probably arose from the old thrombus.

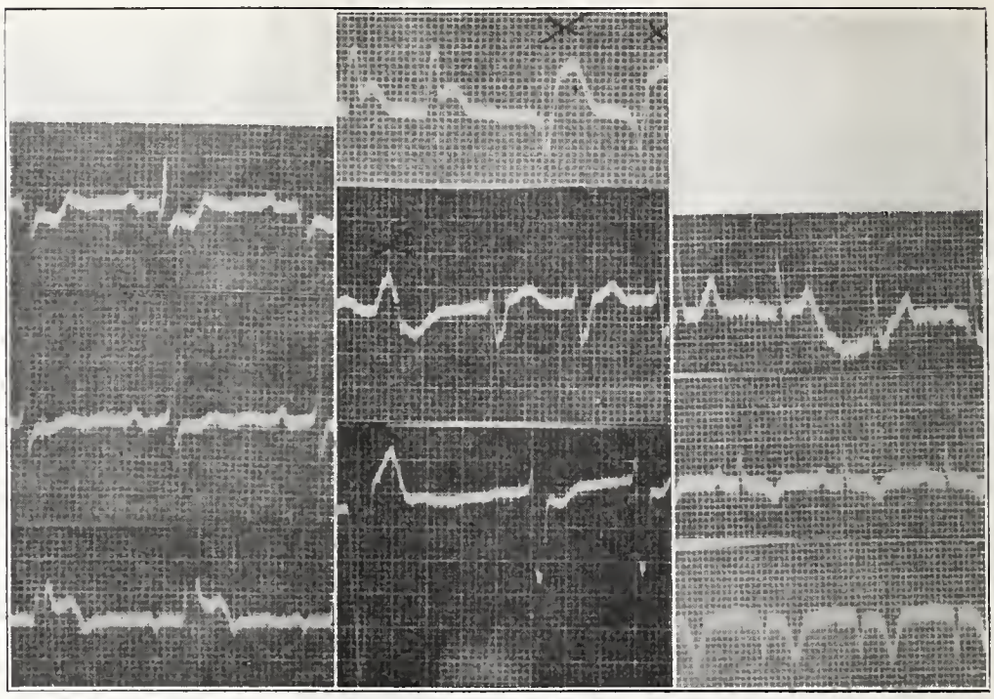

Fig. 5 Fig. 6 Fig. 7

Figs. 5, 6, and 7. Electrocardiograms taken during attacks of angina pectoris which were not fatal.

As is usual in each case the left coronary artery or one of its branches was occluded.

It is of interest that during an equal period of time thirteen patients, who had not had electrocardiograms made, died of occlusion of a coronary artery, unrecognized clinically, but demonstrated at postmortem examination. Among these was a second example of embolism of a coronary artery from a mural thrombus of the left ventricle.

Group II: We have placed in this group eighteen patients whose electrocardiograms were characteristic of coronary artery disease and whose histories and clinical studies were compatible with that diagnosis. Eight of these were females (Table 2). All of the members of this group presented evidence of grave heart disease. The majority complained of attacks of severe precordial distress usually associated with symptoms of heart failure. In the remainder, attacks of dizziness, weakness and breathlessness were considered to be the equivalent of actual pain. The electrocardiograms in this group (Figs. 5, 6, 7), in addition to coronary T waves, usually presented other evidences of grave myocardial damage, such as bending, broadening and slurring of the Q. R. S. complexes, left ventricular preponderance or bundle-branch block.

Group III: This group consists of nine patients with syphilis, syphilitic aortitis, and aortic insufficiency. All were males with positive Wassermann reactions except one whose blood Wassermann had been positive. The youngest was 38 and the oldest 68 years of age (Table 3). All but three had had attacks of anginal pain. All of these patients showed characteristic coronary T waves (Figs. 8, 9, 10), and all but one showed marked left ventricular preponderance by electrocardiogram. In a footnote to one of his articles Pardee mentions the occurrence of the coronary T wave in one instance of syphilitic aortic insufficiency,

TABLE 3—*Nine Cases. Syphilis, Syphilitic Aortitis, and Aortic Insufficiency Existing*

Name	Age	Sex	Blood Pressure	Heart Size	Symptoms	Wassermann	Electrocardiogram
S. C.	68	M	170/100	4.9 12.7	Aortic insufficiency. Anginal pain.	Positive	Coronary T leads I and II. Left ventricular preponderance.
W. S.	55	M	165/40	4.2 11.2	Aortic insufficiency. Anginal pain.	Positive	Coronary T leads I and II. Left ventricular preponderance.
A. V.	48	M	154/34	9 12	Aortic insufficiency. Aneurysm of arch. Sudden death.	Positive	Coronary T leads I and II. Left ventricular preponderance.
J. J.	43	M		4.2 11.3	Breathlessness in attacks. Aortic insufficiency.	Positive	Coronary T leads I and II. Left ventricular preponderance.
F. R.	47	M	140/60	8.9 11.8	Aortic insufficiency. No pain.	Positive	Fig. 8.
J. M.	39	M		Very large	Anginal attack. Aortic insufficiency.	Positive	Fig. 9.
J. E.	48	M	150/0	4.5 12.6	Anginal attack. Aortic insufficiency.	Positive	Fig. 10.
R. C.	48	M	130/50	7 12	Anginal attacks. Aortic insufficiency.	Positive	Coronary T leads I and II. Left ventricular preponderance.
R. G.	38	M	130/0	4.2 9.6	Severe anginal attacks. Aortic insufficiency. Has had positive Wassermann.	0	Coronary T leads II and III. Left ventricular preponderance.

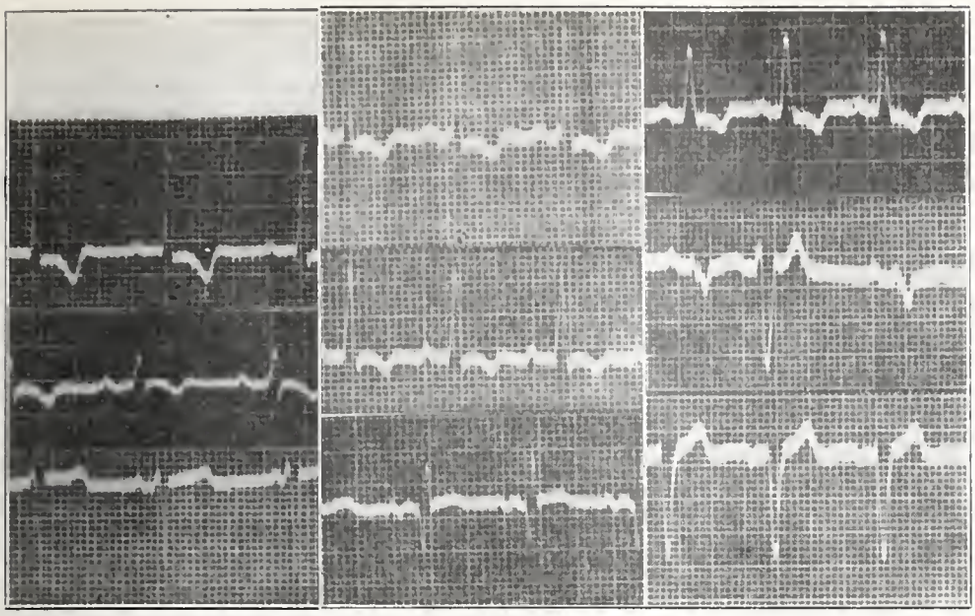

Fig. 8 Fig. 9 Fig. 10

Figs. 8, 9, and 10. Electrocardiograms from patients with syphilitic aortitis and aortic regurgitation showing coronary T waves and left ventricular preponderance.

but aside from that we have found no reference to it in the literature. The part played by coronary artery disease in the symptomatology of syphilitic aortitis is well known and the presence of the coronary T wave in a certain proportion of cases was to be expected.

Group IV: This group consists of nineteen patients of great importance in the study of the specificity of the coronary T wave. In each instance the electrocardiogram showed the characteristic coronary T wave, but clinical studies of the patient had not led us to suspect coronary artery disease (Table 4). We are aware that only postmortem examinations can prove, ultimately, the presence or absence of structural myocardial damage in the area irrigated by the left coronary artery in these patients.

CASE REPORTS

A summary of a few of the clinical records will be given:

Case 1—J. H., 24-495. The patient, a male aged 60, was admitted to the hospital, comatose, with temperature of 104 degrees F. He had marked arteriosclerosis. The heart was said to be normal. The blood pressure was 185/120. Death occurred in a few hours. The electrocardiogram (Fig. 11) showed the abnormalities associated with coronary artery occlusion.

Case 2—J. F., 262-338. A male, aged 52 years, was admitted for gangrene of the right toe, due to a circulatory disturbance thought to be thromboangitis obliterans. The heart was apparently normal. The electrocardiogram (Fig. 12) showed the changes associated with coronary artery obstruction.

Case 3—C. G., 32-807. A boy, aged 19, was examined on account of asthmatic attacks occurring every three to four months. The heart seemed to be normal. The electrocardiogram is shown in Fig. 13.

Case 4—A. T., 257-039. A male, aged 23 years, was

Table 4—*Nineteen Cases. Coronary Artery Disease in Doubt from Clinical Studies, with Electrocardiograms more Positive*

Name	Age	Sex	Blood Pressure	Heart Size	Symptoms	Wassermann	Electrocardiogram
H. B.	17	M	115/0	4.2 11.9	Severe anginal pain with breathlessness. Aortic and mitral endocarditis.	0	Coronary T in all leads.
L. K.	22	F	Normal	5.4 9.8	Severe anginal pain. Probably an embolus of coronary artery. Double mitral lesion. Death.	0	Figs. 17, 18, 19.
L. S.	18	F	Normal	Large	Acute febrile condition. White blood cells 16,000. Anginal pain. Probably a coronary embolism from double mitral lesion.	0	Fig. 16.
M. V.	24	F	Normal	5.1-8.6	Purpura fulminans. Death following hours of severe precordial pain.	0	Fig. 15.
L. S.	30	M	170/0	5.9-7.4	Acute endocarditis with aortic insufficiency. Severe precordial pain.	0	Coronary T leads II and III. Left ventricular preponderance.
N. M.	53	F	220/120	Large	Marked arteriosclerosis with dementia.	0	Coronary T leads I. Atrial fibrillation. Left ventricular preponderance.
L. M.	52	F	154/100	Normal	Diabetes mellitus. Diabetic gangrene.	0	Coronary T leads I. Intraventricular block.
R. K.	47	F	142/90	Normal	Diabetes Mellitus.	0	Coronary T in all leads.
H. B.	60	F		Normal	Myoma uteri.	0	Coronary T leads I and II.
A. T.	23	M	140/40	5-11	Severe anginal attacks. Aortic insufficiency. Double mitral lesion. Fever of short duration.	0	Fig. 14.
E. B.	30	F	120/60	Normal	Pernicious anemia.	0	Coronary T leads II and III.
C. G.	19	M	110/60	Normal	Asthmatic attacks every two or three months.	0	Fig. 13.
N. T.	60	F	160/110	Large	Diabetes mellitus.	0	Coronary T leads I and II. Very high upright T leads III.
J. W.	41	M	230/100	6.5 10.5	Heart failure.	0	Coronary T leads I and II.
D. H.	38	M	180/110	Normal	Chronic Brights disease.	0	Coronary T leads I and II.
J. O.	50	F	240/140	4.1 10.3	Arteriosclerosis.	0	Coronary T all leads.
J. F.	52	M		Normal	Gangrene of foot.	0	Fig. 12.
J. P.	63	M	150/110	6.5 11.3	Attacks of dyspnea.	0	Coronary T leads I, II, III.
J. H.	60	M	185/120	Large	Entered hospital in coma with fever; death.	x	Fig. 11.

admitted. Had fever and pain under the sternum and radiating into the left shoulder. He had a double mitral lesion, an aortic insufficiency and a pericardial friction rub was heard near the apex of the heart. All symptoms disappeared in a few days. The electrocardiogram (Fig. 14) showed a characteristic coronary T wave in each lead.

Case 5—M. V., 259-007. A young woman, aged 24 years, entered the hospital with symptoms and signs of fulminating purpura hemorrhagica of two weeks' duration. She developed severe precordial pain, breathlessness and fever, and died in coma a few hours later. The electrocardiogram (Fig. 15) was taken shortly after precordial symptoms developed and showed a coronary T wave in all leads.

Case 6—L. S., 253-627. A girl, 18 years old, was admitted on account of breathlessness and severe pain over the front of the left side of the chest. She had fever and a leukocytosis of 16,000. The heart was enlarged. There was a double mitral lesion and râles at each base. Her symptoms disappeared rapidly. Two months later, however, she complained that any unusual exertion was followed by severe precordial pain. Her electrocardiogram (Fig. 16) was characteristic of coronary artery disease.

Case 7—L. K., 252-163. A woman, aged 22 years, was under observation for many weeks for grave heart failure. She had a double mitral valve lesion. She suddenly developed severe precordial pain and a pericardial friction rub at the apex of the heart. An electrocardiogram (Fig. 17) showed the curves of a coronary artery occlusion. Fig. 18 was made three days later and Fig. 19 six weeks later; shortly before death.

These abstracts are offered as evidence that in this group of patients coronary artery disease, or embolism of the coronary artery (Cases 4, 6), or hemorrhage into the myocardium or epicardium (Case 5) were probably causal factors in the abnormal electrical response of the left ventricle which produced the coronary T wave in the electrocardiogram.

COMMENT

The clinical and electrocardiographic records of these fifty-four patients are presented as additional evidence of the value of the coronary T wave in the diagnosis of coronary artery disease. In each instance in which post-mortem studies were made of a heart which had produced this wave, occlusion of the left coronary artery or one of its branches was found. Eight examples of this type were observed and placed in Group I.

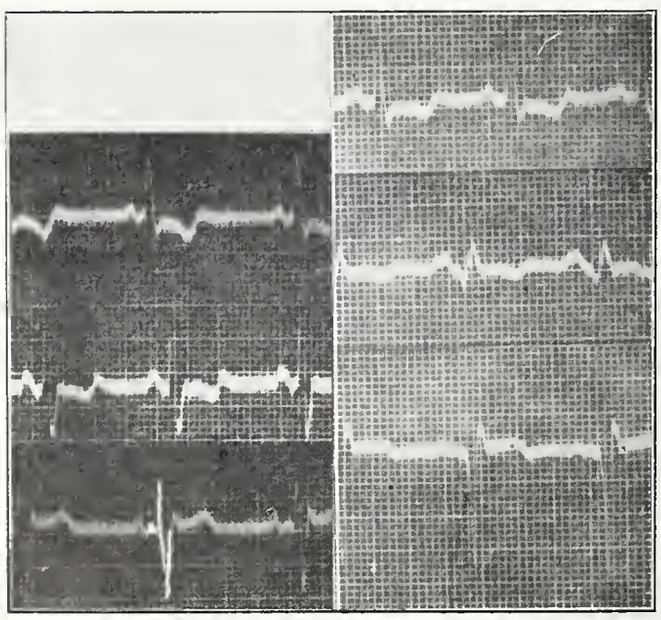

Fig. 11—Case Report 1 Fig. 12—Case Report 2

The presence of coronary artery disease in the twenty-seven members of Group II and Group III may be accepted with considerable certainty. These patients, as a rule, had anginal attacks and grave cardiovascular disease. Nine of the number had syphilitic aortitis and aortic insufficiency, and coronary artery disease under such circumstances is the rule.

Group IV consists of nineteen patients in whom coronary artery disease was not suspected until the presence of coronary T waves was observed in the electrocardiograms. Five of these patients were young individuals with valvular lesions of endocarditis and each complained of precordial pain. In these cases damage of the left ventricular muscle or of the left coronary artery by an inflammatory process or infarction of the muscle following embolism might easily have occurred. We have recently seen a fatal coronary artery thrombosis from a small inflammatory lesion in an otherwise healthy coronary artery. One patient in this group had a fulminating purpura hemorrhagica and developed severe precordial pain shortly before death. The remainder were past middle life. Several were diabetics with vascular degeneration and the others presented clinical evidence of cardiovascular disease. Anatomical proof of lesions of the left coronary artery or of degeneration from any cause of the area of the left ventricle supplied by this artery is absent in this group. Clinical and electrocardiographic evidence, however, practically prove the presence of a lesion of the left ventricular wall.

INTERPRETATION OF ILLUSTRATIONS

The illustrations in this article show the coronary T wave better perhaps than it can be described. In the examples of acute occlusion of a coronary artery the S-T or R-T interval, normally at the isoelectric line, may begin high up on the descending limb of the R wave. This feature is nearly constant in recent infarctions of the wall of the left ventricle. Later the commoner type of coronary T wave makes its appearance. With satisfactory clinical improvement even this abnormality may become less marked after weeks or months. Pardee believes that the type of T wave which appears at the time of infarction is probably produced by the reaction to the anemia of the heart muscle, while the coronary T wave may be dependent on the reaction of repair about the anemic area. We have seen a typical coronary T wave from a young person with pernicious anemia and also from a dying human heart just before the onset of ventricular fibrillation. It seems probable, therefore, that the abnormal electrocardiograms are the result of structural muscular damage from inadequate oxygen supply. That this condition is usually caused by obstruction or occlusion of an artery with subsequent temporary or permanent damage of ventricular muscle has been repeatedly demonstrated. The shape of the electrocardiogram is dependent, however, on the result of injury involving a certain area of the heart as demonstrated by Smith [7] and Eppinger and Roth-

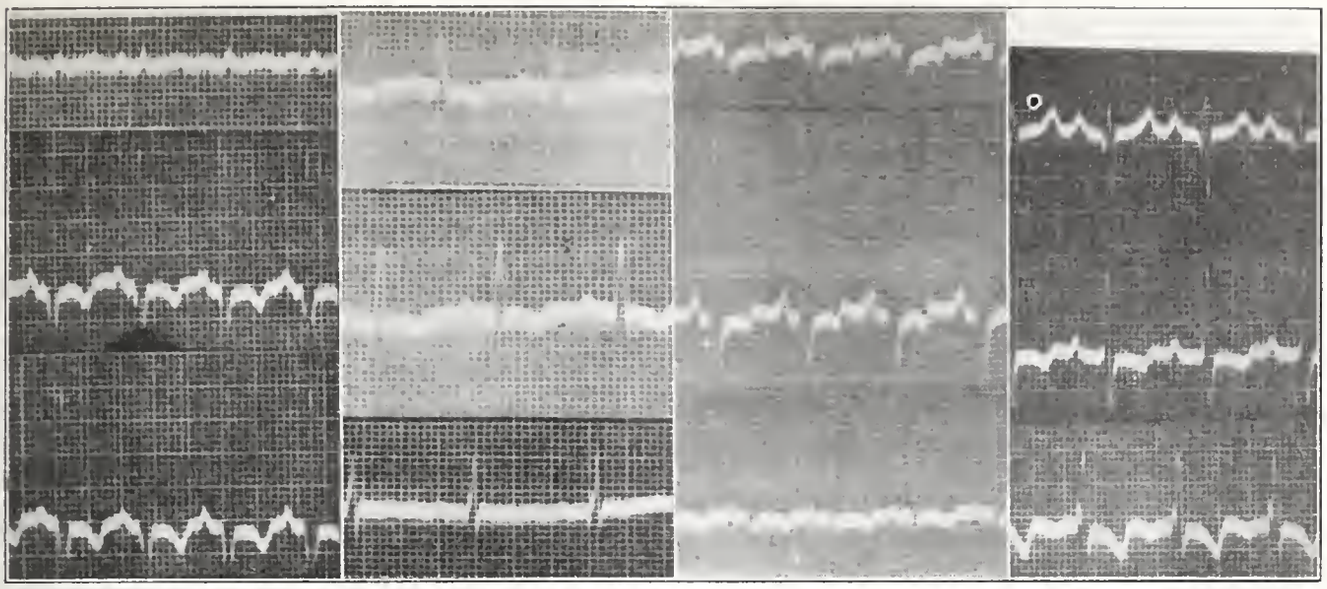

Fig. 13—Case Report 3 Fig. 14—Case Report 4 Fig. 15—Case Report 5 Fig. 16—Case Report 6

berger [6] on dogs, and Samajloff [11] on frogs. We have seen the same curves (Fig. 15) in the course of fatal purpura hemorrhagica and Cohn and Swift [12] have observed them in acute rheumatic fever.

COMMENT

Correlation of clinical electrocardiographic and autopsy studies of patients with coronary artery disease may amplify considerably the usual description of the symptomatology. In a number of instances the disease makes its first clinical appearance by sudden death. In the remainder, however, the symptomatology is extremely varied. This variability is an important diagnostic sign, and is produced by small areas of infarction due to obstruction or occlusion of smaller branches of the coronary arteries. These patients complain of attacks of dizziness after effort or sudden spells of breathlessness or palpitation of short duration often associated with substernal pressure or slight epigastric distress. Between attacks the patient may feel well, but minor symptoms may be found by careful questioning. Physical signs may be absent or, if present, may be difficult to evaluate. Sooner or later grave symptoms make their appearance. These are usually distress on effort or even severe anginal pain associated with symptoms of myocardial insufficiency. In a large number severe attacks of angina pectoris occur. In these patients the pain is often in the epigastrium and associated with fever, leukocytosis, and vomiting, and unless an apical pericardial friction rub is found, errors in diagnosis may be made. In the remainder myocardial insufficiency ensues and pain is never a prominent feature. The disease is produced essentially by slow sclerosis of the left coronary artery. When the artery is narrow in its proximal portion death from angina pectoris is the rule. When the thick-walled artery is dilated in its proximal portion multiple areas of myocardial degeneration and fibrosis occur from occlusions of small terminal arteries and left ventricular failure, often without pain, ensues.

CONCLUSIONS

1. The high degree of specificity of the coronary T wave has been confirmed by this study.
2. The presence of a coronary T wave in nine cases of syphilitic aortitis has been demonstrated.
3. Two examples of proved and two of probable embolism of the coronary artery have been recorded.

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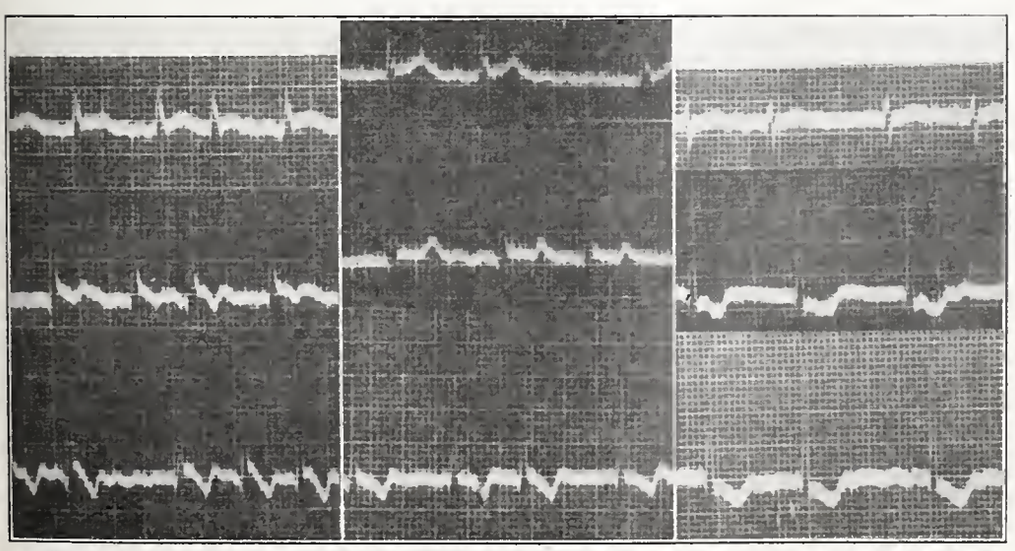

Fig. 17—Case Report 7 Fig. 18—Three days later Fig. 19—Six weeks later

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DISCUSSION

James B. Herrick, M. D. (122 South Michigan Avenue, Chicago, Illinois)—Studies of this character are desirable, as they may throw new light on the physiology and pathology of the heart. They will also aid in diagnosis.

The clinical picture of acute obstruction of larger branches of the coronary arteries is fairly definite. Electrocardiographic findings are here confirmatory rather than decisive. They may, however, be helpful in telling the location of the lesion. The electrocardiograph may be of greater help in the group of cases in which there has been a sudden obstruction of smaller branches of the coronary artery, or in the other group in which the obstruction with resulting myocardial changes has been more gradual. It is in these two groups that the startling dramatic picture of sudden obstruction is lacking, and it is here that the tracing made by the instrument of precision may make clear symptoms that would otherwise be obscure. Such studies, therefore, as those of Doctors Berman and Mason are to be encouraged.

One must recognize, however, that an abnormal graph may be produced by lesions that are not in the strict sense coronary, at least not due to defective coronary circulation. Toxic conditions as met with in infections or in the free use of digitalis may markedly alter the electrocardiogram. Presumably here the effect is due to, primarily, alteration of the myocardium.

Perhaps the doctors' paper will convey the impression that it is by the changes in the T wave alone, or, chiefly, that coronary disease may be recognized, though I am sure they do not intend to convey such an impression. As their own figures show, other features also may point to disorder in the myocardium and the conducting system, *e. g.*, changes in the Q. R. S. portion of the graph.

William J. Kerr, M. D. (University of California Hospital, San Francisco)—There is no doubt that the electrocardiogram may give us valuable additional information in regard to the condition of the myocardium. With such observations as we have made over many years, we feel that we can get a pretty good idea of what is going on in the heart muscle by electrographic study. The general picture of coronary occlusion with its persistent mediastinal pain, the appearance of vasomotor collapse, the slight fever, leukocytosis, and low blood pressure, is now becoming pretty well recognized by clinicians. This condition, I believe, should be sharply differentiated from the symptoms of angina pectoris with its transient attacks ushered in by effort and excitement and relieved by nitrites or rest. We have come to place a great deal of reliance on the general clinical picture plus the examination of the heart itself. On this examination of the heart we usually find a diminished first sound, which is often slurred or blurred at the apex, and a second sound which is greater than the first sound. Sometimes we find a pericardial rub in the acute cases. The x-ray film sometimes will show a bulging of the apex of the heart suggesting the possibility of an aneurism of the heart wall. This is more often seen in the old cases where there have been recurrent attacks of occlusion. The more one correlates the clinical findings with the electrographic findings the more one can predict what the electrocardiogram will show. The changes which we get in persons with a marked left preponderance, which is usually associated with hypertension, is of course well known to everyone. There is then a transitional stage which one can note bridging over to a rather typical bundle-branch block.

The usual criteria for an interpretation of a bundle-branch block should of course be present before we make such an interpretation, but we feel that we can anticipate the finding of a bundle-branch block. There are cases where defects in the conduction system produce bizarre electrical reactions. The higher we go in the Purkinje system the more sharply the lesions in the main branches of the bundle are differentiated, the more sharply the electrocardiogram will apparently demonstrate this. One, however, must be careful in his interpretation of the electrocardiogram, particularly in the direction and shape of the T waves in Lead 3. Sometimes also in Lead 1 the T wave may be inverted without other evidence of defect excepting for the presence of a left preponderance. Digitalis will of course at times confuse the picture, but in my experience with this drug, which agrees with the reports of others, inversion of the T waves in Lead 3 exceeds that of Lead 2 or Lead 1.

In referring to the electrocardiograms presented by the authors, I would place different and more complete interpretations on a great many of those shown. In Fig. 1, for example, there is no definite inversion of the T wave in any of the leads, although the T waves tend to be diphasic in Lead 1. There is definite slurring of the S wave which is also noted slightly in Leads 2 and 3. In this instance I would place the damage rather low in the heart and not involving one of the main branches. One certainly could not say here there was a typical T wave of coronary occlusion. In Fig. 2 there is a very marked left ventricular preponderance which is probably due to right bundle-branch block, showing all the necessary criteria for this interpretation. In such instances the T wave is opposite in direction to the main deflection. In this case there is also difficulty to make out the auricular waves and there probably is evidence of further damage in the auriculo-ventricular conduction system. In Fig. 3 the T waves are inverted in Leads 1 and 2 with the convexity upward, but the thing of great interest here is the small amplitude of the initial phase of the ventricular complex which, in our experience, indicates a grave myocardial damage. In Fig. 4 there is a definite tachycardia with a rate of about 150 with evidence of blocking in the right branch of the conduction system. This resembles very much some of the curves we have of ventricular tachycardia, although it may be due to a nodal rhythm. In these four examples, Figs. 1 to 4 inclusive, we have four entirely different types of electrocardiographic evidence of myocardial damage, and I do not believe that one could pick out any particular feature, such as the T wave, and say that that is the chief evidence of a certain kind of damage. In all instances there is evidence of grave myocardial damage, and in many of the examples shown, one might expect to find a patient with serious disease of the heart.

One might also take up some of the other figures shown, for example, Fig. 5, which shows a very marked left preponderance with what, I believe, is on the borderline between the ordinary left ventricular preponderance which we see and a right bundle-

branch block. There is also evidence of a delayed conduction time from auricle to ventricle in this case. Fig. 6 is one of the most interesting ones shown, and it seems to me there are so many variations in the complexes of the ventricle that we can believe that this indicates very grave myocardial damage. There are apparently extra systoles shown at "X" in the three leads with a very remarkable curve in Lead 1, suggesting ventricular tachycardia. There is probably a defect in the right bundle. No auricular waves are clearly shown suggesting that the patient has auricular fibrillation as well. I do not believe that the direction of the T waves in this case alone would give us any real clue of the cause of the trouble.

In Fig. 7 we have very marked inversion of the T waves in Lead 3 and less so in Lead 2. These we have seen in patients whom we have thought presented clinical evidence of a coronary occlusion, and I have not seen such marked inversion of the T wave in patients on digitalis therapy. In Fig. 8 we have another instance similar to Fig. 5 which is borderline between a left preponderance associated with hypertension or a high pulse pressure and that associated with a bundle-branch block. The T waves here are as characteristic as any shown by the authors for coronary occlusion. Figs. 9, 10, 11, and 12, show very much the same picture as Fig. 8. In Fig. 10, I believe, we can definitely say that there is a right bundle-branch block with one ventricular extra systole shown in Lead 2.

In Fig. 13 we see inverted T waves in Leads 2 and 3 suggestive of digitalis action. The rate, however, is more rapid than that usually observed when toxic digitalis effects have been produced. The same might be said for Fig. 16, which resembles Fig. 13 very closely. In Figs. 14 and 15 the T waves in Lead 1 are inverted and diphasic. In Figs. 17, 18, and 19, there is, of course, inversion of the T waves in Lead 3 and in Figs. 17 and 19 also of Lead 2. This could be due to digitalis therapy. In all instances the auricles apparently are fibrillating. I should not attach too much importance to the T waves in these cases in Leads 2 and 3 if they were not also inverted in Lead 1.

The authors' observations are very interesting, but I would call attention to the great variation shown in the electrocardiograms in these cases and wish to state that in my experience coronary occlusion may give a great number of manifestations all the way from slight evidence of myocardial damage to the more extensive type with complete heart block, or complete bundle-branch block, or ventricular tachycardia—even ventricular fibrillation. They might all occur one after the other in the same individual in different stages of the disease. The finding, however, of some of the bizarre forms which have been described, should help us to improve our knowledge of the underlying processes which produce the clinical picture in these cases. In many instances, I believe the evidence of grave myocardial damage can be found on the careful physical examination of the heart.

*

Doctor Mason (closing)—We shall not attempt to discuss all the points brought up by Doctor Kerr in his comments. A few, however, need some clarification. None of the patients had received digitalis, so that factor may be dismissed. We were not interested primarily in "aborization" blocks, bundle-branch blocks, abnormal rhythms or evidences of myocardial damage in general, for such electrocardiographic alterations were to be expected and were found with great frequency in patients with coronary artery disease with or without angina pectoris. Nor were we interested primarily in inversion of the T wave. A study of the tracings published by Rothberger and Winterberger, Smith and Pardee, and of the tracings of proved myocardial infarctions in this paper, will show the changes in the S-T interval which are characteristic although possibly not pathognomonic of large areas of degeneration, from any cause, in the muscle irrigated by the left coronary artery. The S-T interval in such instances begins anywhere along the S wave, ending in a very acute T wave. This T wave is usually inverted in Lead 1, and high and upright in Lead 3. We feel sure that a study of these details will show the "family resemblance" of these curves. Doubtless many patients with myocardial claudication will not show such characteristic electrocardiographic curves, but that does not lessen the value of such tracings when present.

HALLUX VALGUS*

REPORT OF CASES

By Merrill C. Mensor, M. D.
San Francisco

Discussion *by Leonard W. Ely, M. D., San Francisco; Edward C. Bull, M. D., San Francisco; Maynard C. Harding, M. D., San Diego; John C. Wilson, M. D., Los Angeles.*

At the suggestion of Dr. L. W. Ely, who has for many years been interested in the possible congenital etiology of hallux valgus, I have attempted to collect and correlate some fifty-odd cases treated in the orthopedic clinic of Stanford University during the past three years.

The question of the cause of this deformity is still an open one and upon reviewing the literature we find that nearly every article presents a different theory. Perhaps this is one reason our treatment of this condition is not all that we desire.

REVIEW OF LITERATURE

In the early part of the twentieth century Dwight, and subsequently Young, of Philadelphia spoke of the congenital etiology of this deformity calling attention to the varus position of the first metatarsal and attributing it to an anatomical anomaly caused by an accessory bone between the first and second metatarsal which they designated as the "intermetatarseum." This bone mechanically forced the first metatarsal into varus, weakening the ligaments and causing the deformity. Subsequent workers have failed to identify this anomaly, and I have reviewed our x-rays very carefully as well as a series of some one hundred "normal" feet without finding this condition.

In 1912 Ewald called attention to the congenital etiology of this condition reporting a large series of cases. The facts which he brought out at that time are essentially as follows: there is present a definite varus of the first metatarsal with changes at either the metatarso-cuneiform joint or a twist in the shaft of the first metatarsal at its base which causes a varus deformity of this bone, with a secondary abduction of the phalanges. This picture reminds one of the structure of the foot in the ape and is probably evidence of an atavistic tendency. Over 50 per cent of these cases had a positive family history. Ewald very sagely questions that if this condition is due to ill-fitted shoes as advocated by a great number of physicians, why is it not more prevalent among the upper class of women who are constantly confining their feet in tight, narrow shoes? His conclusion tallies with my experience, that this deformity is far

* From the Department of Orthopedic Surgery, Stanford University Medical School.

* Read before the San Francisco County Medical Society, August 17, 1926.

TABLE 1—*Résumé of Cases Treated for Hallux Valgus*

Case No.	Sex	Age	Duration of Symptoms	Duration of Deformity	Arthritis	Family History	Short Heel Cords	Foci of Infection	Treatment
141623	F	21	8 years	7 years	O	....	X	.....	Shoes
145568	M	68	10 years	30 years	X	....	O	Amebiasis	Emetin
89470	M	44	10 years	.....	X	....	O	.....	.....
139109	F	40	8 years	30 years	X	....	O	Amebiasis	Operation
140703	M	41	12 years	20 years	X	X	X	Teeth	Operation
144312	F	51	20 years	20 years	X	....	O	Teeth	Operation
31834	F	2	Metatarsus	Varus	O	X	X	.....	.....
31835	F	24	None	Childhood	O	X	X	.....	.....
107970	M	66	6 years	35 years	X	....	....	.....	Operation
127528	F	35	2 years	.....	X	....	X	.....	Operation
145344	F	45	5 years	Childhood	X	....	X	.....	.....
96422	M	48	10 years	.....	X	....	X	.....	Arches
99660	M	39	3 months	.....	X	....	X	Tonsils	Operation
71803	F	59	3 years	9 years	X	....	X	Teeth	.....
132639	F	43	3 years	4 years	O	....	X	.....	.....
140556	M	16	3 years	.....	O	....	X	.....	.....
118220	F	22	1 year	4 years	X	....	....	Teeth	.....
11849	F	45	15 years	15 years	O	X	X	.....	Operation
109174	M	58	2 years	2 years	O	....	....	.....	.....
104814	M	42	5 years	.....	O	....	X	.....	Operation
124246	F	50	1 year	1 year	X	X	....	Teeth	Arches
84950	F	53	4 years	.....	X	X	....	Teeth	.....
52610	M	53	15 years	.....	X	....	....	Teeth	.....
135931	M	46	1 month	1 year	O	X	....	.....	Operation
129003	F	40	10 years	6 years	X	....	....	.....	Operation
64510	F	55	10 years	Childhood	X	....	....	Pelvic	.....
.....	F	63	.....	.....	....	....	....	Amebiasis	Emetin
146984	M	38	6 months	3 years	....	X	X	.....	Operation
120555	M	59	1 month	.....	X	....	....	Teeth	Operation
120404	F	52	3 years	20 years	X	X	X	Amebiasis	Emetin
147973	F	63	None	Childhood	O	X	X	.....	Non-painful
H. C.	F	59	2 years	36 years	X	....	....	Amebiasis	Emetin
146653	M	42	8 years	.....	X	X	....	G. U.	Emetin
D. C.	F	54	.....	Childhood	X	X	....	.....	.....
150802	M	12	None	Varus	O	X	....	.....	.....
146486	F	54	6 years	Childhood	X	....	X	None	Emetin, oper'n
E. H.	F	23	None	Childhood	O	X	....	.....	Operation
152685	F	47	Many years	.....	X	X	....	Teeth	.....
152168	F	61	6 months	Many years	O	....	....	.....	.....
33947	F	65	2 years	6 years	O	O	....	.....	Operation
139474	F	63	2 years	6 years	X	O	....	.....	Operation
112206	M	9	Metatarsus	Varus	O	X	X	.....	.....

more common among the laboring classes who would not tolerate tight, ill-fitting shoes.

In medical literature ideas frequently are presented, forgotten and presented again. Within the past year a prominent orthopedic surgeon called attention to the varus deformity of the first metatarsal and suggested an operation similar to that advocated thirteen years previously by Ewald, that is, an osteotomy at the metatarso-cuneiform joint correcting the varus deformity at its base rather than by means of the usual operation.

SYMPTOMS

The two main symptoms of so-called "bunions" for which a patient consults a doctor are deformity and pain. It is interesting to note that the majority of patients came because of pain in the great toe joint rather than because of the deformity *per se*. The predominant age was between the fourth and sixth decades, the time when chronic arthrites are most prevalent. Of those patients with painful joints I found in forty-eight percentage definite x-ray evidence of arthritic change. This was later checked in the laboratory in cases operated on. The pathological picture was similar to that seen in the chronic arthritic joint and disclosed areas of aseptic necrosis in the head of the first metatarsal with increased fibrous proliferation. Some patients showed large areas where the articular cartilage had been denuded with irregularities of such a nature that it was easy to see why joint motion was painful. The proximal phalanges were strangely free from any macroscopic involvement.

Ewald's statement regarding the obliquity of the cuneiform metatarsal joint with an apparent change in the shape of the cuneiform was noted

Fig. 1—Case 3184a. Mother with marked hallux valgus deformity

Fig. 2—Case 3184. Daughter (age 2 years) of patient cited in Fig. 1. Note metatarsus varus of both feet with epiphyseal changes

Fig. 3—Case 147973. Female, aged 63 years. Note extreme deformity which has never been painful

roentgenologically. A common finding was that the deformity had been present for a number of years without causing symptoms, but in the past few months it had become unbearable because of pain. May not pain be the sign of arthritic changes? With this in mind I have given five patients emetin with noticeable improvement. In nearly every patient with definite evidence of arthritis I likewise found some possible focus of infection, either bad tonsils, diseased teeth or amebiasis.

I am convinced of a familial proclivity toward this condition. It was only in the last twenty-five patients that a careful family history revealed such tendency in over ninety per cent, extending back in one patient over three generations. Two patients (Figs. 1 and 2) are exceptionally interesting: the first a mother with a definite hallux valgus and her daughter, aged two years, with a well-marked metatarsal varus; the second patient was a mother who complained of bunions. Her history disclosed that her mother and grandmother both had the same deformity, and the x-ray of the feet of her two small children showed definite metatarsus varus. It will be interesting to see if these children will develop a hallux valgus deformity.

Three patients with a marked deformity (Fig 3) came to me with other complaints and this condition was only discovered in the course of the routine examination, the patient being quite unaware of any discomfort other than the difficulty of obtaining large enough shoes. X-rays showed a marked deformity but no evidences of arthritic changes.

A predominant physical finding in these patients is a short heel cord; this is apparently a factor in the condition, but to what extent I will not discuss at this time.

TREATMENT

Regarding treatment there has been a variety of technique followed and consequently I am not in a position to quote the results of any one of them. There have been resections of the head of the metatarsal bone, oblique osteotomy and linear osteotomy, some of which were successful while often other patients still complained of pain after the deformity had been corrected.

In these patients it is possible to do considerable damage by opening an arthritic joint, so allowing the inflammatory process within the bone marrow to be disseminated. I am planning in the future, therefore, to follow Ewald's technique and keep entirely away from the diseased joint. If the patient has an arthritis, a search for and removal of the possible foci of infection, followed by proper antiarthritic treatment should precede any operation. If there is simply a slight exostosis with a mild degree of metatarsus varus, a linear resection of the exostosis, leaving the joint surfaces intact is usually sufficient. If there is a marked varus deformity the Ewald operation is then the procedure of choice, provided the valgus deformity is not too extreme or of too long duration. With the Ewald procedure I have noted, that due to the contracture of the joint capsule on the lateral aspect, it is difficult to maintain the

Fig. 4—Boy, aged 12, showing definite metatarsus varus. Note also irregularities of epiphyses.

Fig. 5—Brother (aged 3 years) of patient cited in Fig. 4 showing similar deformity.

Fig. 6—Mother of patients cited in Figs. 4 and 5. Note definite hallux valgus deformity.

Fig. 7—Photograph of resected head of first metatarsal bone showing typical erosion of cartilage with cavitation and irregularities

phalanx in the corrected position in spite of incision and freeing of the joint capsule.

CONCLUSIONS

1. Hallux valgus is a congenital condition caused by a varus deformity of the first metatarsal; the abduction of the great toe being secondary, and due to the pressure of shoes.

2. The deformity itself is not painful; pain is due to arthritic changes in the great toe joint.

3. There is definite familial tendency among these patients.

4. Short heel cords are a frequent part of the deformity complex.

5. The procedure of choice is operation after the arthritis has become quiescent, the most logical point of attack in selected cases being in the metatarso-cuneiform joint.

490 Post Street.

DISCUSSION

Leonard W. Ely, M. D. (Stanford University Medical School, San Francisco)—Doctor Mensor's paper brings up again a state of affairs in medical teaching that has always interested me, namely, the acceptance of the obvious as true. Time and again I have taken the trouble to investigate some "well-established fact," and have found that it is based on nothing more substantial than the unsupported opinion of its originator. *Post hoc ergo propter hoc.* No case of hallux valgus in a person who did not wear shoes has ever been reported. Therefore shoes are the cause of hallux valgus. What could be simpler? We all wear shoes, therefore we all have hallux valgus, and those who wear the worst shoes have the worst deformity. This might do for an unintelligent laity, but it explodes when we investigate it. However, it is standard teaching in practically all medical books, and little attention is paid to Young and Ewald when they call attention to its absurdity. Doctor Mensor has done a good piece of work, and has accumulated strong evidence to back up his conclusions, but I fear he will be disappointed by their reception. An "established fact" is not easily overturned. It is easier to accept an obvious explanation than it is to weigh evidence. The latter requires thought.

A patient with hallux valgus consults us for one of two causes, *i. e.,* pain or deformity. If for the latter, then almost any type of operation will be successful; if for the former, not necessarily so. The operations for hallux valgus are legion, and the discussion on the operative treatment in an orthopedic meeting is always interesting, and sometimes acrimonious. Positive statements are wont to be plentiful, and facts few. It appears that for a great many patients any operation is successful, but that in some cases pain and stiffness follow any operation on the metatarsal joint. These symptoms cause the operator to change his method of operating thereafter, and to repeat his experience. The reason for this, I think, has been pointed out by Mensor. The operation has been done on diseased tissues in the unsuccessful cases. In all the discussions on hallux valgus there is one aspect of the subject conspicuous by its absence—the pathology. You cannot solve these problems by abstract reasoning. The diseases of the joints are no exception to the general rule. If you wish to understand them, and devise a rational method of treating them, you must study their pathology. This is one thing in which most men have no interest. Their minds are on higher things.

Edward C. Bull, M. D. (Shriners' Hospital for Crippled Children, San Francisco)—Doctor Mensor's paper places emphasis where it is needed.

Metatarsus varus as the fundamental cause of many cases of hallux valgus has frequently escaped recognition, with the result that fundamentally incorrect treatment has been applied.

Conservation in the surgical treatment of hallux valgus is, I believe, of prime importance, especially in the presence of age or arthritis.

The correction of a causative metatarsus varus is a logical and fundamentally conservative procedure in the treatment of properly selected cases of hallux valgus.

Maynard C. Harding, M. D. (425 Electric Building, San Diego)—Doctor Mensor has presented with convincing clearness a view which I feel will secure a wider acceptance than Doctor Ely predicts.

Orthopedists, at least, quite generally agree that metatarsus varus is often hereditary. I have obtained a clear family history in a great many cases, and have seen a number of small children with this deformity well marked.

As Doctor Ely so well says, we must study the pathology before advising treatment. We should cease classifying all kinds of bunions under one head. There are at least four types to be differentiated, each with distinct indications for treatment.

The first type is a true hallux valgus. It is characterized by normal position of the metatarsal bones, an exostosis on the mesial side of the first metatarsal, overlaid by a bursa and a corn. The great toe rarely has more than forty-five degrees deflection, and is but little rotated.

The second type is metatarsus varus, with a divergence of the first metatarsal, a great deflection of the toe, and the usual exostosis and corn. The sesamoids are displaced outward, and after inflammation one or both adhere to the metatarsal head. This in turn causes the rotation of the toe so common in advanced cases. Any treatment that does not take this pathology into account will fail to give relief in many cases.

The third type is hallux valgus with osteomyelitis. Doctor Mensor is surely right in his conclusions regarding it. Such feet are not to be operated on until the arthritis has at least become quiescent.

The fourth type is hallux rigidus. It may be associated with the last type and requires special operative consideration.

With this minimum of pathologic classification in

mind we will not be led into a routine treatment of all cases.

JOHN C. WILSON, M. D. (1136 West Sixth Street, Los Angeles)—Doctor Mensor has presented some very convincing arguments to prove that metatarsus varus is an important etiologic factor in the development of hallux valgus deformity. The majority of us are inclined to drop into the pitfall pointed out by Doctor Ely, that shoes must be the important causative factor. It is undoubtedly true that metatarsus varus is a predisposing factor in the development of hallux valgus, but there is some doubt about it being the sole explanation.

Very few cases of hallux valgus in men come under our observation; on the other hand the condition is extremely common in women. We are all aware that shoes for men as they are constructed today follow anatomical lines rather closely, while shoes for women are constructed according to the ideal of Confucius. Whether or not women would develop hallux valgus deformity if they wore shoes resembling those worn by men cannot be stated, but the fact remains that the style of women's shoes will probably not be changed, so therefore it must be considered in both cause and effect.

Too much emphasis cannot be placed upon the inadvisability of operating upon arthritic joints. Infection is disseminated throughout the capsule and soft tissues, resulting in prolonged disability, pain, and swelling. The operative technique in itself is probably not the most important phase in the treatment of hallux valgus. While the Keller operation is preferred, it is safe to say that any operation in vogue will be satisfactory in properly selected cases if the after-treatment is carefully carried out. Restoration of balance between the flexor and extensor muscles of the great toe, and a free range of motion in the great toe joint are essential to the normal gait.

Doctor Mensor deserves great credit for the conciseness and clearness with which this subject has been presented.

BLADDER TUMORS*

By J. C. NEGLEY, M. D.
Los Angeles

DISCUSSION *by Robert V. Day, M.D., Los Angeles; Charles P. Mathé, M.D., San Francisco; William E. Stevens, M.D., San Francisco.*

FOR the unknown factor of etiology many reasons have been presented at various clinics and by research groups throughout the world, but none have been proven, hence a discussion of the etiology of bladder tumors is unnecessary.

PATHOLOGY

Over 90 per cent of bladder tumors are epithelial in origin. The many and varied classifications of these tumors are of academic rather than of practical interest. The urologist must make his prognosis and outline his treatment after a cystoscopic examination. Through this means, the classification of Young of Johns Hopkins may be adopted:

1. Papillomas, single or multiple.

Papillomas have distinct pedicles, many and varied forms and shapes of papillae. Single tumors may be benign or malignant, but multiple ones are almost always malignant.

2. Papillary, non-infiltrating tumors with a tendency to spread laterally.

Lateral spread tumors spring from central papillomas and have a sloping rather than an overhanging edge, ulceration is uncommon and infiltration late.

3. Tumors consisting of intravesical mass with bladder-wall infiltration and ulceration.

Intravesical mass tumors begin as papillomas, but later roll up into mushroom mass with a gray necrotic base which may contain calcareous deposits. Most all these tumors have infiltrated the bladder wall and are generally found on the base of bladder.

4. Entirely infiltrating tumors with little intravesical portion.

Entirely infiltrating or bladder-wall type are uncommon, but extensive with widespread ulceration and contracted bladder.

5. Pedunculated tumors, not infiltrating, not papillary.

Pedunculated tumors not infiltrating, not papillary, are very rare, mostly connective tissue tumors as fibroma, myxoma, sarcoma.

DIAGNOSIS

Generally made with the cystoscope, but in cases where this instrument cannot be used we depend on history, symptoms, small pieces of tumor passed in urine, cystograms and, at times, through cystotomy for other causes. Rectal or vaginal palpation is at times of value.

SYMPTOMS

Unfortunately the same line of symptoms is present in many other conditions and none is pathognomonic. The common ones of aid are hematuria, frequency, pain, burning and difficulty of urination. The hematuria is generally the first to appear, intermittent in type, is given little attention by the patient, and, sad to relate, often as little by the physician. The amount of blood varies from a few drops to enough to exsanguinate the patient or fill his bladder with clots necessitating a cystotomy.

Pain, independent of urination, is a rather late symptom and is due to nerve pressure through infiltration of the bladder wall. Frequency may be present early or late, due to cystitis, irritation of infiltrating growth on nerve ends and lessened capacity. The constitutional symptoms as cachexia, anemia, loss of weight, are not so evident here as in malignancy elsewhere in the body.

METASTASIS

Generally speaking, bladder tumors are slow to metastasize, but with our improved methods of diagnosis and a more careful check of our records this opinion may have to be revised. Judd reports metastases in 21 of 166 deaths that came to autopsy, of which six were in abdominal viscera, four in pelvic bones, two in lungs and two in the groin. These were single instances of patients with metastasis in the abdominal wall, rectum, humerus, regional lymph nodes, lumbar spine, uterus, and retroaortic lymph nodes.

TREATMENT

Many and varied are the methods: some one or other a hobby of one surgeon, while his colleague may use them all in the course of a year or perhaps run the entire gamut on an individual case. Perhaps we owe a great debt to the enthusiast in any one line of treatment, for on him falls the burden and opprobrium if he fails and little

* Read before the Urology Section, California Medical Association, at its Fifty-Sixth Annual Session, April 25-28, 1927.

TABLE 1—*Symptoms and Their Duration*

	Number of Cases	3 Weeks	6 Weeks	2 Months	3 Months	4 Months	5 Months	6 Months	8 Months	9 Months	1 Year	2 Years	3 Years	4 Years	5 Years	Life		
Hematuria	21	1	2	1				5		2	3	2	2		1			
Hematuria, Dysuria and Frequency	36				5	6	5	5	4		6	1	1	1	1	1		
Dysuria and Frequency	25		2	3	4	3		3	2	2	4		1	1				
Pain	8					3				2	3							
No Symptoms	15																	

praise when the mortality rate is lowered and results improved. The most used methods of today are surgical diathermy, radical surgery, radium through open or closed bladder, fulguration through cystoscope, x-ray, the Percy cautery, electrocautery, or a combination of any number of them.

RESULTS

The literature assuring results, as published with reports, grows brighter each year and, in fact, becomes encouraging. Young and Scott report 380 cases from Brady Institute, 27 per cent cured by various methods. They consider surgery too great a risk in extensive growths. They believe 75 per cent of papillomas and 25 per cent of infiltrating carcinomas should be cured by fulguration, radium, or electrocautery. Federoff reports 165 cases. He advises two-stage cystectomy in selected cases, but cites mortality rate 50 to 68 per cent in single-stage cystectomy in 321 collected cases. Deaver and McKinney report 121 cases and believe that when partial resection cannot be done without transplantation of ureters, fulguration or cautery should be used and that ureteral transplant and resection is not justifiable. Squier believes in segmental resection, and cites twenty out of seventy-five patients alive, without recurrence eight to twelve years after operation. Kidd reviews results in 162 collected cases; says death was due to obstruction of ureters, exhaustion, pain, bleeding, and not to spread of tumor. Twenty-six of his cases had malignant papilloma; twelve resisted diathermy; twenty-eight had partial resection, with thirteen cures. Bumpus, in 527 cases from Mayo Clinic, concluded radium alone not successful, but was most beneficial after surgery or fulguration. Radium followed by operation gave poor results. Tumors

TABLE 2—*Results of Treatment*

	Cause of Death										*Alive and Well*					
Kind of Treatment	Dead	Number of Cases Living	No Record	Pneumonia	Metastases to Lung, and Spine or Long Bones	Bilateral Hydronephosis	Uremia	Pulmonary Tuberculosis	Pyelonephritis	Recurrence in the Bladder	1 to 3 Months	3 to 5 Months	5 to 9 Months	9 to 12 Months	1½ Years	2½ Years
No Surgery 1. Palliative	10	0	1	2 in 3 wks. 2 in 2 mos.	2 in 3 mos.	3 in 4 mos.										
Cystoscopic 2. Fulguration	0	26									11	7	6	1	1	
Cystotomy 3. Surgical Diathermy	7	14		1 in 20 days 1 in 4 mos. 1 in 7 mos.			1 in 12 days	1 in 1 mo.	1 in 1 mo. 1 in 2 mos.		3	6	2	1	1	1
Cystotomy 4. Percy Cautery	12	1														
Cystotomy 5. Electro Cautery	3	3		1 in 1 mo. 1 in 5 mos.						1			3			
Cystotomy 6. X-Ray	2	2								2			2			
Cystotomy 7. Percy Cautery and X-Ray	4	0								4						
Cystotomy 8. Radium and X-Ray	2	1								2		1	not	imp	roved	
9. Resection	2	0	1	Peritonit	is					1 in 2 yrs.						
10. Cystotomy alone	9	5	1	2 mos. 2	6 mos. 1	3 mos. 1	3 w. 1		wks. to 3 mos. 3		(2	2	1)–	No c	hange	
11. X-Ray alone	1									1 yr. 1						

too large for resection were best treated by cautery or surgical diathermy.

In the *Journal of Urology*, February, 1927, Young stated resection should be done where easily accessible tumors are found. In other locations, electrocautery and radium. He applies radium through cystoscope in many cases. Chute of Boston considers bladder tumor treatment results disappointing, and does not believe radium is helping the situation. Bransford Lewis states radical resection sounds well, but is more theoretical than practical when applied to most of our everyday cases. Kretschmer warns of the dangers of embolism and fistula, following diathermy and of extensive fibrosis following radium.

COMMENTS ON ONE HUNDRED AND FIVE CASES

For your consideration is appended a table of 105 cases of tumor of the bladder from the Los Angeles General Hospital.

You will bear in mind that most of our cases are terminal or far advanced, and that in this class of patient an efficient and reliable follow-up history is not easily obtainable.

Pathology—Of the series of 105 tumors ninety-two were papillary carcinoma, twelve scirrhus carcinomas and one sarcoma, twenty were single with one visible pedicle, the remainder were either multiple or had fused to form one large tumor mass. The remainder came in for relief of other urinary pathology, as prostatism, calculi, etc.; and bladder malignancy was discovered in routine examination.

Diagnosis—A diagnosis was made by cystoscope in most cases and, as a rule, a section was not taken through the cystoscope. In all cases having a cystotomy the diagnosis was confirmed by pathological section. Some cases that could not be cystoscoped were diagnosed by cystogram.

Metastases—Ten Cases

Iliac lymph nodes	4
Lumbar spine	3
Lungs	1
Long bones (ribs and femur)	1
Liver, preaortic glands, and sigmoid	1

Results

	Cases	Deaths
1. No active treatment	10	10
2. Closed fulguration	26	0
3. Surgical diathermy	20	7
4. Percy cautery	13	12
5. Electrocautery	6	3
6. X-ray	5	2
7. Percy cautery and x-ray	4	4
8. X-ray and radium	3	2
9. Resection	3	2
10. Cystotomy alone	14	9
11. X-ray alone	1	1
	105	52

Cases 3, 4, 5, 6, 7, 8, 10, also had cystotomy.

SUMMARY AND CONCLUSIONS

Age: The youngest was 20 and had a sarcoma. Bladder tumors occur most frequently between the ages of 60 and 70; next between 50 and 60; and closely following this decade, with only a difference of four, is that of 40 to 50. Sex shows a preponderance of males, probably because they come oftener to the urologist for cystoscopic examination. If women with bladder symptoms were cystoscoped more frequently perhaps more bladder tumors would be discovered. Methods of treatment in this series of cases at least seem to favor fulguration or surgical diathermy, either through a closed or open bladder. All of those having cystoscopic fulguration, to say the least, had less discomfort and loss of time than those having x-ray or treatment through the open bladder.

My observation has been that large size and apparent malignancy should not deter one from using fulguration through cystoscope, for many of those here recorded had reached generous size. Surgical diathermy through the open bladder causes the patient comparatively little discomfort and pain. There seems to be only slight tendency to fibrosis, thus making the dreaded hydronephrosis a less frequent complication. As to the other methods used in this series, the Percy cautery, electrocautery, x-ray, radium, resection, or a combination of any number of them; there is not a sufficient number to speak authoritatively. Also most of the cases treated by the latter methods were terminal ones in which no form of treatment was thought of benefit.

The Percy cautery has advantage in that there is but little postoperative suffering; the technique is not complicated and if used early enough the cures should be as many as by other methods. Disadvantages are the danger of fistula, quite marked fibrotic changes which seem to predispose to hydronephrosis and the large amount of absorption from the burned area.

X-ray seems to cause a great deal of suffering and fibrosis. Radium is awkward and inaccurate when used through the cystoscope (unless needles are implanted in the mass). These are often in the care of radium clinics, where the workers are little versed in cystoscopic pathology and technique. Vice versa, the trained cystoscopist is little versed in the knowledge and use of radium. Better cooperation between radium clinics and urologists would enhance favorable results (or more complete recoveries). Radium does cause pain, suffering, and a great deal of fibrosis. Resection with the cautery knife of that part of the bladder wall containing the tumor mass, where it is easily accessible, would seem to be an ideal method, but the operation of total cystectomy, with cold knife or cautery carries too high a mortality rate to be justifiable in more than a few selected cases, but when resection is done by any method it should be preceded by ureter transplantation. When both operations are performed at the same time the mortality rate becomes too high to make it justifiable.

219 West Seventh Street.

DISCUSSION

Robert V. Day, M. D. (412 West Sixth Street, Los Angeles)—I have listened with a great deal of interest to Doctor Negley's paper on bladder tumors. His classification, diagnostic methods employed and technique of treatment are comprehensive.

This much may be stressed, viz.: that slightly over 50 per cent of all bladder tumors at the moment of

the first cystoscopic examination are benign papillomas, all potentially malignant and sure to become malignant if untreated, improperly treated or neglected, and yet susceptible in almost every instance of a cure by high frequency methods through a cystoscope. Of the remaining 45 per cent at least four-fifths could have been easily diagnosed at the start, when they could have been readily cured by high frequency methods if the clinical signs of bladder tumor had been heeded and a cystoscopic examination made. In other words over 90 per cent of bladder tumors are clinically benign papillomata when the first symptoms begin and may be cured if the practitioner will simply heed ordinary clinical warnings and have the patient cystoscoped by a reliable urologist when these first symptoms appear. In actual practice, however, dilatory methods and procrastination with simple medical treatment without proper examination are much too frequently employed; and patient is given medicine by mouth and told that his hematuria will probably cease and he needn't worry about it. Usually the hematuria does cease temporarily or for a long period under any form of treatment or without any treatment, and then both the patient and the physician develop a false sense of security. One of the most valuable lessons to be learned in the practice of medicine is that, with the single exception of a terminal hematuria from a posterior urethritis or prostatitis of a gonococcic nature, hematuria always means organic disease or organic change somewhere in the genitourinary tract. Many a case has become hopeless simply because of delayed diagnosis and, in consequence, of delayed or inadequate treatment. Obtaining specimens of the tumor through the cystoscope for microscopic section should be done when feasible and is not contraindicated. Furthermore typing the tumor according to the classification of Broders is often invaluable from a standpoint of prognosis, of future management and for statistical purposes. Unfortunately for most of us about 50 per cent of bladder tumors observed clinically are already definitely malignant and far advanced. In this class of case the outlook is discouraging and the experience of most of us including that of the very largest clinics, is that whatever we do, not more than 5 per cent are cured. The effort is not entirely lost because most of the methods of treatment (except the reckless use of x-ray and radium) are palliative. Since over 90 per cent can readily be diagnosed while still curable by the application of high frequency current through a cystoscope, often reinforced by radium application through the cystoscope, the real promise of cure is an adequate and immediate cystoscopic examination of every case of hematuria except terminal hematuria from acute gonorrhea, and also adequate and prompt urological examination of patients with dysuria and urinary infection.

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Charles P. Mathé, M. D. (844 Phelan Building, San Francisco)—Doctor Negley's timely paper on bladder tumors is a distinct contribution to the literature and adds to the statistical collection of cases presenting these lesions. It is apparent that statistics such as these collected from the various hospitals throughout the country will in the aggregate give us valuable information as to the management of vesical neoplasms. Eighty-five per cent of the cases reported showed symptoms, the most frequent of which were hematuria, dysuria and frequency of micturition. Early cystoscopic examination of patients presenting the clinical syndrome of hematuria and difficulty in urination is the only accurate way of demonstrating a bladder tumor, be it early or late. Relief of the tumor is more likely to be obtained if the diagnosis is made early. It behooves the internist and general practitioner to realize the importance of hematuria and the possibility of malignancy being the etiologic cause and to advise the patient to have an early diagnosis by cystoscopic examination.

The treatment of bladder tumors calls for intelligent use of the various present-day methods at our command. Papillomata are always potentially malignant, but when detected early they can often be entirely destroyed by the use of the high frequency electrocautery through the cystoscope. Early cases of carcinoma are often amenable to radical surgical removal of the tumor including a fairly large margin of healthy bladder wall. In advanced cases the prognosis is exceedingly poor. The occasional good result and the frequent amelioration of symptoms, however, warrants the use of radium, deep x-ray therapy, chemiotherapy, and diathermy through the open bladder. Dr. J. Walker considers all bladder papillomas as malignant, and at the recent meeting of the western branch of the American Urological Association held in Seattle, July 7, 1927, denounced the common practice of fulguration as the treatment of these tumors and in its place advises the use of diathermy through the open bladder. In rather advanced cases which are complicated by fistula formation and bilateral hydronephrosis deviation of the urinary stream is a good palliative procedure. It not only does away with continual incontinence of urine, but alleviates actual pain and relieves the back pressure into the kidneys. I have recently had two such patients in which transplantation of the ureter into the skin of the inguinal region afforded considerable comfort and amelioration of the symptoms.

The poor results tabulated in Doctor Negley's paper emphasize our inability to meet the problem of bladder cancer. The occasional good result, however, consisting of an actual cure, warrants the energetic use of the various methods of treatment at our command. I recall a patient, a man in active business in San Francisco, suffering from carcinoma solidum of the bladder who is still living five years after complete surgical excision, also a patient who was relieved of an early malignant papilloma by electrocautery. At the present time our only hope of coping with bladder tumors seems to be through early diagnosis, and it behooves the general practitioner to realize the importance of hematuria, particularly when it occurs in a person of the cancer age.

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William E. Stevens, M. D. (870 Market Street, San Francisco)—Doctor Negley has condensed into comparatively few words a great deal of interest and value concerning tumors of the bladder.

His classification is concise, and fully covers the types of growths that we usually encounter.

Although hematuria, often unaccompanied by pain, is the most common symptom of this condition, its significance is often overlooked. Notwithstanding the emphasis that has so frequently been placed on the necessity for complete urologic investigation in the presence of hematuria, many patients receive instead a little urotropin or other medicine; and if, as so often happens, the blood disappears temporarily from the urine, they are discharged as cured. Bleeding may not occur again until the growth is far advanced. The poor results obtained in Doctor Negley's series of cases is largely due to the advanced stage of the lesions coming under his observation.

I have found cystography a valuable method of diagnosis when satisfactory cystoscopy is impossible.

I cystoscope as many women as men and find about the same number of bladder growths in both sexes.

In my experience the best results have been obtained in the treatment of the apparently benign pedunculated papillomata by means of fulguration through the operating cystoscope. Partial resection has proven most useful in the treatment of malignant growths not involving the base of the bladder. When the latter is involved surgical diathermy has been of great value in several of my cases. I believe that this is destined to become the most popular method of treatment for malignant tumors of the bladder.

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Doctor Negley (closing)—In closing I wish to thank my confrères for their discussion of this paper. Doctor Mathé and Doctor Stevens both stress the poor results obtained in this series of cases. For-

tunately Doctor Day has answered this criticism better than I could in the following quotation: "About 50 per cent of bladder tumors observed clinically are already definitely malignant and far advanced. In this class of cases the outlook is discouraging, and the experience of most of us, including that of the very largest clinics, is that, whatever we do, not more than 5 per cent are cured." Since this can readily be supported by a search of the literature and statistics, I still feel that the results obtained by us were not poor but compare favorably with those of other clinics, and rest assured that, although the results may seem poor, at least they represent the results as found, uncolored by bias against or enthusiasm toward any one method of treatment. Doctor Mathé quotes Doctor Walker of Seattle as substituting surgical diathermy through the open bladder for cystoscopic fulguration. I hardly believe such a formidable, time-consuming, expensive, discomfort-producing procedure is to be preferred over simple cystoscopic fulguration in those tumors that are small and of a relative low degree of malignancy. The writer and all the discussers have again emphasized the apparent apathy on the part of the profession at large regarding hematuria. Notwithstanding the stress placed upon the importance of this symptom, the urologist is still called in, time and again, to diagnose a case that has had hematuria over a long period of time only to find an inoperable malignancy which might have been cured if diagnosed in the early stages. It is possible that the medical journals by some timely editorials or other timely articles might be able to waken the profession to the necessity of a thorough examination on all cases of hematuria of unknown origin.

INTRACRANIAL HEMORRHAGE IN THE NEWBORN *

WITH REPORT OF SIX CASES

By Morris H. Silverberg, M. D.
San Francisco

Discussion *by L. I. Breitstein, M.D., San Francisco; John W. Sherrick, M.D., Oakland; John C. Dement, M.D., San Diego.*

INTRACRANIAL hemorrhage in the newborn is the most frequent and fatal injury of childbirth. The incidence is high ranging from 5 to 15 per cent, with a mortality of from 40 to 50 per cent. Reports on autopsies in deaths from all causes in the newborn by Ehrenfest,[1] Holland,[2] and Saenger,[3] show gross intracranial hemorrhages in from 40 to 50 per cent, with the greatest number having occurred in prematures and breech extractions.

At Mount Zion Hospital during the year from July 1, 1925, to July 1, 1926, in 138 clinic cases delivered on the obstetrical service, we had an incidence of 4.3 per cent. This incidence is quite low, but several babies having no symptoms may have been overlooked in this series, as spinal punctures were not done. Sharpe[4] and McClaire, in a study of spinal fluids in a series of 500 cases from twelve to twenty-four hours after birth, showed an incidence of 9 per cent. M. H. Roberts[5] in his recent study of spinal fluids taken during the first twelve hours after birth, in over 400 cases showed an incidence of intracranial hemorrhage of 14.1 per cent, with only 6 per cent presenting symptoms.

CAUSES

Intracranial hemorrhage in the newborn may occur during or after normal labors, only exhibiting symptoms in the severe cases. It is frequently overlooked.

The chief cause is trauma. The main predisposing causes are:

1. Prematurity of the infant, which renders it more sensitive to trauma, so that normal labors may be sufficient to cause hemorrhage.

2. Breech extraction, in which rapid or forceful delivery of the after-coming head produces the injury.

3. Precipitate labors, where there is sudden compression of the head.

4. Very difficult or prolonged labors, where there is excessive molding of the head with injury.

5. Instrumental deliveries.

Premature infants and breech deliveries show the greatest incidence. Where sudden compression of the head or sudden release of the pressure occurs hemorrhage is frequently the result.

The most frequent site of hemorrhage is in the free margin of the tentorium (usually at the juncture with the falx cerebri) with resulting rupture of the venous sinuses. Beneke,[6] in his method of autopsy, has shown the tentorium lacerated in supra- and infratentorial hemorrhages. Hemorrhage occurs whenever meninges are torn, but it may occur in the brain substance proper, and within the ventricles. There may be no symptoms and the intracranial hemorrhage may be overlooked.

DIAGNOSIS, SYMPTOMS, AND TREATMENT

The diagnosis is readily made when the newborn shows drowsiness, stupor, cyanosis, difficult breathing, focal signs as twitchings, poor tissue turgor, refusal to nurse, and the general symptoms of increased intracranial pressure, as separation and bulging of the cranial sutures and the fontanelles and tonic or clonic convulsions. Early lumbar puncture is an accurate means of diagnosis. The coagulation time and bleeding time should be done immediately after delivery in all cases of difficult labors or suspected hemorrhage. The coagulation time in normal newborn babies is from five to nine minutes with an average of seven minutes. The bleeding time is from two to five minutes with an average of three and one-half minutes. Increased coagulation time or hemorrhagic disease of the newborn is one of the chief contributory factors in serious intracranial hemorrhages.

The treatment is essentially one of prevention. Special precautions in breech extraction, gently hastening difficult or prolonged labors, and careful, slow instrumental deliveries will help in decreasing the incidence. Rotating prolonged occiput posterior positions manually or with the Kjelland forceps if possible and doing episiotomies are prophylactic measures. Cesarean sections should be done in those cases in which the head will not

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* From the Obstetrical Service of Mount Zion Hospital.
* Read before the San Francisco County Medical Society, September 21, 1926.

engage after the test of labor or where the pelvic measurements are too small.

As soon as there is even the slightest suspicion of intracranial hemorrhage, one should administer 20 to 30 cc. whole blood intramuscularly. This may be repeated every eight hours if necessary. (Large amounts of whole blood intramuscularly give the best results.) Horse serum and thromboplastin have been used, but whole blood gives the quickest and best results. Where the intracranial pressure is pronounced and the symptoms fail to subside, spinal punctures should be performed to relieve the pressure.

CASE REPORTS

The following six case reports on our service show a mortality of 50 per cent. Autopsies were done on two of the babies that died.

CASE 1. *Precipitate Labor*—The mother, a primipara, age 19, with normal pelvic measurements had a precipitate labor and delivered spontaneously in one hour and twenty minutes. The child gave a husky cry at birth, and was apparently a perfectly healthy normal baby. About eight hours later the child became cyanotic and began to breathe irregularly. With the usual measures for resuscitation the child was revived, but there was a tendency to collapse. Physical examination showed no bulging of the fontanelle. The heart action was very good. The lungs showed coarse bubbling râles. The child was given 1/600 grain atropin. It was then given 20 cc. of the mother's blood, intramuscularly; the child rallied for several hours, but the cyanosis and irregular respirations returned. The coagulation time was eight minutes; the bleeding time three minutes. The measures for resuscitation were again used, but were of no avail. About eighteen hours after delivery the infant died.

Autopsy—Examination revealed several large clots of blood in the subdural space, in the parietal and occipital regions, and a large amount of unclotted blood at the base of the cranial cavity. The left lung showed complete atelectasis.

CASE 2. *Precipitate Labor, with Occiput Posterior*—Mother was a multipara, in labor four hours. Male infant was delivered spontaneously, in occiput posterior position. The infant was developed normally, but was flaccid, had a marked pallor, and did not breathe spontaneously. Artificial respiration produced irregular breathing. The heart rate varied around 100 per minute. Artificial respiration, external stimulation and oxygen were employed. While preparing to give the infant whole blood the heart suddenly stopped and the respirations ceased. One cc. adrenalin was injected intracardially and a minute later a quiver could be felt in the cardiac area, and in two or three minutes an occasional heart beat was palpated. The heart rate gradually increased up to 70 to 80 per minute. During this time the infant gasped occasionally, and the above named measures of resuscitation were continued. In about thirty minutes 20 cc. of whole blood was taken from the mother and injected into the buttocks of the infant. Shortly after this injection the respirations began to occur spontaneously and the child rallied. Seven hours later the child suddenly died. A second injection of adrenalin intracardially was of no avail. We were unable to obtain an autopsy.

CASE 3. *Premature Baby with Breech Delivery*—Mother, age 36, with history of thirteen full-term pregnancies. No miscarriages. Present pregnancy was uneventful until the seventh month, at which time patient accidentally fell. About twenty-four hours after the fall the membranes ruptured and labor set in. Patient was delivered spontaneously of a male infant in frank breech position. At birth the child cried spontaneously, but the cry was feeble. There was slight pallor with no cyanosis; tissue turgor was poor. Respirations were shallow and irregular. Baby was wrapped in cotton and kept at a uniform temperature, and put on two-hour feedings. Twenty-four hours after birth the infant vomited for the first time. A little later had a generalized convulsion accompanied by horizontal nystagmus. The coagulation time was five minutes; the bleeding time one minute forty-five seconds. About two and one-half hours after the first convulsion 20 cc. of whole blood was taken from the mother and injected intramuscularly. That evening the baby had another convulsion. The only evidence of intracranial hemorrhage, in addition to the convulsions, was increased tension in the fontanelles. Forty-four hours after birth the infant suddenly expired.

Autopsy—All the positive findings were in the cranium. The sutures were widely separated, there was no bulging and no caput. On opening the cranium clear cerebral spinal fluid escaped. The meninges over the convex surface of the cerebrum were normal. On lifting the cerebral hemispheres the left side was negative, but the right posterior cerebral fossa contained about 30 cc. dark unclotted blood and the meninges of the right parietal and occipital areas were bloodstained. All the blood was subdural and was unclotted. Postmortem diagnosis: Supratentorial hemorrhage on right side, limited to the parietal and occipital regions.

CASE 4. *Prolonged Labor with Excessive Moulding of Head—Low Forceps Application*—Multipara 2. In labor twenty-nine hours. (Gwathmey anesthesia used.) Low forceps were applied as a prophylactic measure and female child was delivered. The child was cyanotic, had a weak cry, and the tissue turgor was poor. Oxygen was given. The coagulation time was four minutes; bleeding time, five minutes. Fifteen cc. of mother's whole blood was given intramuscularly and the infant responded by marked improvement in color and respiration. The following day, 20 cc. whole blood was again given intramuscularly and the baby continued to improve. Occasional twitchings were noticed for two days. The baby continued to improve in appearance and twitchings disappeared. It was given artificial feeding, as the mother did not have sufficient milk; and on discharge was apparently normal and increasing in weight. It was seen several times later and was doing nicely, gaining in weight and seemingly a normal baby.

CASE 5. *Occiput Posterior Position with Application of Low Forceps*—Mother, age 20, primipara, very anemic, hemoglobin 48 per cent. Past history revealed the fact that she had always been delicate and weak. Pregnancy was uneventful. Was in labor twenty-one hours, but the head failed to rotate anteriorly after it reached the pelvic floor. Labor was terminated by the application of low forceps. Patient had been given Gwathmey anesthesia during labor, and during delivery was given gas and oxygen and ether to the surgical degree. Pituitrin, minims iii, was given before the low forceps were applied.

The infant was delivered in an asphyxiated condition, with complete flaccidity of all muscles and a marked pallor of the entire body. About fifteen minutes elapsed before the baby was resuscitated sufficiently so that it could breathe and cry with fair regularity. Physical examination revealed very poor tissue turgor, the cranial sutures overlapped considerably, and there was a moderate caput succedaneum. The baby spent a rather restless night, did not cry lustily, and the breathing was somewhat irregular. The coagulation time was seven minutes; the bleeding time was five minutes. Fourteen hours after birth the infant was given 15 cc. of the mother's blood intramuscularly. There was no untoward reaction from the injection. Another injection of 20 cc. mother's blood was given the next day, but very little improvement was noted. On the seventh day after birth the child developed a temperature of 40 degrees C. and began to vomit all feedings. Two bowel movements during the day contained blood. Its general condition became worse. The vomiting and high temperature persisted on the eighth day, when 20 cc. whole blood was taken

from the father and injected intramuscularly. Within three hours after administration of this blood, improvement could be noted. The baby did not vomit again and the fever subsided gradually. There were no more bloody stools. The baby continued to improve and was discharged from the hospital when 24 days old in apparently perfect condition. It was last seen when about 6 months old and had developed normally, with nothing to indicate the difficulties it had experienced during its first three weeks of life.

In this patient the quality of the blood administered obviously played an important part. There was very little improvement after administration of blood from the anemic mother. There was definite immediate permanent improvement after administration of blood from the father, whose hemoglobin was 95 per cent and who was a robust individual.

Case 6. *Normal Labor with Precipitate Delivery*—Mother, multipara, age 35. Previous pregnancies and labors normal; pelvic measurements normal. First stage of labor lasted three hours and twenty minutes. Second stage was precipitate, and baby was shoved through birth canal and delivered spontaneously with two or three strong contractions. The baby was markedly cyanotic at birth and breathing was shallow. The heart and lungs were negative, the head was normal in contour, fontanelles were open, no bulging and no caput. Oxygen was administered with some relief. The coagulation time was three minutes, the bleeding time was six minutes. Four hours after birth 10 cc. of mother's blood was given intramuscularly. This seemed to have a very marked effect, for the cyanosis decreased and the breathing became normal. Twenty-four hours later the baby became cyanotic again. Oxygen was administered and 25 cc. of whole blood taken from the father was administered intramuscularly. The baby soon showed marked signs of improvement, the cyanosis completely disappeared, and the breathing became normal. The baby was discharged on the tenth day, apparently normal.

CONCLUSIONS

1. Intracranial hemorrhage occurs very frequently; from 5 to 15 per cent in the newborn, during or immediately after delivery; and shows a high mortality.

2. It occurs in normal as well as in abnormal deliveries, and is frequently overlooked. This condition occurs most in premature, breech extraction, and in precipitate labors.

3. The treatment is one of prevention. Prophylactic measures during labor and delivery should be instituted.

4. Whole blood from a healthy robust donor given intramuscularly in doses of 20 to 30 cc. (which may be repeated every eight hours if necessary) to any newborn child showing symptoms of intracranial hemorrhage, gives the quickest and best results.

350 Post Street.

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DISCUSSION

L. I. Breitstein, M. D. (350 Post Street, San Francisco)—I heartily agree with Doctor Silverberg's conclusions and wish to emphasize some of his statements; especially those dealing with preventive treatment and prophylactic measures.

Looking at the question as an obstetrician, I firmly believe that our problem can be solved by doing better obstetrics. This means: (1) Employing better prenatal care. Our prospective mother must be in perfect health and kept that way in order to obtain a healthy full-term infant. Starting with a healthy mature infant, the obstetrician must (2) employ better intrapartum care. He must use a technique based on a perfect knowledge of the mechanism of labor, using gentleness and care in order to bring this baby undamaged into the world.

The big cause of intracranial hemorrhage is trauma—birth injury; and it happens during labor or shortly after labor, chiefly in the period of descent. See to it that all conditions, so necessary for descent, have been fulfilled. The cervix must be fully dilated. There must be no disproportion between presenting part and pelvic canal. Watch fetal heart repeatedly all during this stage. Avoid haste. Do not use pituitin. It certainly is responsible for an untold number of intracranial hemorrhage cases. Employ freely prophylactic episiotomies and low forceps when the head is arrested on the floor with no advance. Beware the contracted outlet, just as much an indication for Cesarean section as a contracted inlet.

I cannot agree with the authorities who claim that the use of anesthetics in labor is the cause of intracranial hemorrhage. Morphin-scopolamin or Gwathmey methods may cause oligopnea, even asphyxia, but if kept warm and watched the babies will soon come out of their anesthesia. Undue brute force manipulation in the resuscitations is absolutely contraindicated.

The employment of prophylactic whole blood injections in all cases of difficult labor, whether the baby is born spontaneously or with the use of instruments, is indicated. At Mount Zion Hospital it is a standing order in my service. Our nurse is trained to watch the newborn baby for symptoms of intracranial hemorrhage and to report any suspicious signs, no matter how trivial. Whole blood is easily obtained and repeated injections of big doses may save many a baby.

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John W. Sherrick, M. D. (350 Twenty-ninth Street, Oakland)—Doctor Silverberg's paper has served to emphasize anew the ever present danger of intracranial hemorrhage in the newborn that every physician must face in his obstetrical work. The incidence that he reports seems high, yet I doubt if it really gives us the true frequency of this complication which probably occurs in a large number of infants without giving rise to immediate symptoms or late sequelae. I believe the condition is met in minor degrees without presenting changes that can be detected by any of our methods of diagnosis.

There is little to add to the presentation of the general causes and predisposing factors to this complication and its treatment, but perhaps I may emphasize certain points. The premature infant in the primiparous patient with rigid cervix and perineum and in the multiparous woman whose labor is precipitate or is complicated by abnormal presentation runs such a risk of intracranial damage that I think the prophy-

lactic use of whole blood may well be used routinely in such cases immediately after birth.

I am very enthusiastic in favor of the prophylactic forceps operation aided by episiotomy in the presence of a rigid pelvic floor with a long and moderately narrowed angle. Properly used it protects the delicate brain tissues of the baby, avoids the danger of undue shock and cerebral hemorrhage and also conserves the maternal strength. One should always exercise a studied slowness and gentleness in every forceps operation, whether it is a prophylactic procedure or one designed to terminate a prolonged labor with fetal embarrassment. Skill and not force is the requirement in these cases. Too often serious cerebral trauma is inflicted by the compression of forceps blades which may be prevented by gauze interposed between the forceps handles; or it may be caused by too forcible and unskillful downward traction which drags the head against the pelvic angle.

Posterior positions require all the skill and assistance that the obstetrician can utilize to protect the child and the mother. When progress is at all delayed I am in favor of manual assistance for securing dilatation of the cervix, followed by rotation and forceps extraction of the baby. While many of these cases will undoubtedly correct themselves and deliver spontaneously if left alone, it means usually a very prolonged and exhausting labor for the mother and for the baby a delivery that is endangered by shock and cerebral trauma. Such a procedure saves hours for the two patients and lessens their dangers.

As Doctor Silverberg emphasizes, prevention is the most important factor in treating these complications. The use of whole blood intramuscularly often accomplishes wonders, but if we can avoid the complication by skill and assistance, so much the better for these little patients.

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John C. Dement, M. D. (2525 Fourth Street, San Diego)—Doctor Silverberg's article places a timely emphasis on a condition which is only too often overlooked. The diagnosis is easy only in the frank cases. Those that are more or less masked and appear late are not so easily recognized. These occur usually with hemorrhagic disease, the birth history is often normal, and symptoms may not appear until a bloody stool is seen. In these cases prolonged bleeding time is generally found, and the traumatic element may be slight. As in the cases developing earlier, blood transfusion, using whole or citrated blood, offers prompt relief if done in time.

The author stresses the intramuscular injection of blood. I am inclined to think that the Sidbury method of giving the blood intravenously through the umbilical stump is preferable, especially in urgent cases. If the cord is cut long, as it should be after difficult labors or in suspected cases, the blood may be given directly into the umbilical vein as late as three days after birth. In this way the blood is introduced directly into the circulation, which may be so weak that the intramuscular blood would never be absorbed. Alpha lobelin and carbon dioxid and oxygen mixtures are valuable aids in the treatment of these cases and are preferable to oxygen alone. In extreme cases the blood may be introduced into the fontanelle or directly into the ventricles.

There is very little one might add to the author's comprehensive discussion of the subject. His remarks on the prophylaxis of this condition are especially worthy of careful attention. The question of when and when not to interfere is an ever present one in obstetrics that demands our most careful judgment. As we begin to better recognize these cases of intracranial hemorrhage in the newborn, it appears that there is such a thing as occasionally being too cautious and that certain of these complications may be due to non-interference as well as to instrumental deliveries. Doctor Silverberg has certainly contributed something of decided value in presenting the subject from the viewpoint of the obstetrician.

THE VAN DEN BERGH TEST AND THE ICTERUS INDEX*

By Gabriel Segall, M. D.
and
M. C. Terry, M. D.
Los Angeles

Discussion *by Roy W. Hammack, M. D., Los Angeles; Charles L. Bennett, M. D., Los Angeles; Arthur L. Bloomfield, M. D., San Francisco.*

THE study of pathological conditions associated with disturbed liver function has been considerably facilitated recently by the use of certain tests designed to determine the presence and the quantity of bilirubin in the blood in normal or pathological amounts. This paper considers two of these tests, namely, van den Bergh's and Meulengracht's.

EARLY TESTS FOR BILIRUBIN IN BLOOD

Prior to van den Bergh various workers had considered the question of bile in normal blood. Hammerstein in 1878, by oxidation of a chloroform extract of serum, found that most bloods gave a blue or green color like that obtained from bilirubin by the same means. But his method was not delicate enough to detect small quantities with certainty and did not exclude the possibility that other colored compounds, not due to bilirubin, were formed by the reagents employed.

Aube, in 1908, introduced a spectroscopic method by means of which he was able to demonstrate bilirubin in most normal sera. The method is specific for bilirubin and useful as a control, but it is not easily used for quantitative determinations and, because of the large amount of blood required, is not suitable for clinical purposes.

Ehrlich, in 1883, discovered the diazo reaction, which goes by his name, and showed that of all the known bile pigments only bilirubin coupled with diazonium salts in acid solution. But Ehrlich did not work with blood serum.

VAN DEN BERGH'S DIRECT AND INDIRECT TESTS

It was left to van den Bergh to show that Ehrlich's reaction could be employed for the detection of bilirubin in serum, exudates and other protein-rich fluids by a test requiring but little time to do, of great simplicity and of extraordinary delicacy and certainty. Van den Bergh says that the delicacy of the test is such that one part of bilirubin in one and a half million parts of serum can be easily demonstrated and that its specificity can be proved by control chemical tests and by the spectroscope.

Van den Bergh published his observations in 1918 in an extensive monograph entitled "Der Gallenfarbstoff im Blute." The test is, as he says, extremely simple. Briefly it consists in adding freshly prepared diazo reagent, either directly to the clear serum or to the protein-free supernatant fluid, after precipitation by means of two volumes of alcohol, whereupon a red or violet red color

* Read before the Pathology Section of the California Medical Association at its Fifty-Sixth Annual Session, April 25-28, 1927.

appears the depth of which is in proportion to the bilirubin content.

Fresh bile from the gall bladder and serum from patients with obstructive jaundice give the test in the first manner spoken of and also in the second manner. Normal serum and serum from patients with non-obstructive jaundice do not give the test in the first manner but do give it in the second manner. We have, therefore, two ways of doing the van den Bergh test: one known as the direct, the other as the indirect, by means of which we can distinguish between obstructive and non-obstructive jaundice.

Normal serum, when the indirect reaction is used, is found to contain as an average, one part of bilirubin in 500,000 parts of serum. All cases of jaundice of what ever sort can be shown by one test or the other to contain an increased amount of bilirubin; and a subnormal amount has been shown in aplastic anemia, secondary anemia, nephritis and in tuberculosis not complicated by emphysema.

Van den Bergh determined the normal content of serum by comparison with pure bilirubin in alcoholic solution. But since pure bilirubin is not easy to obtain, some other color standard had to be devised if the method was to be practical. Such a standard was found by van den Bergh, first in an ethereal solution of ferric thiocyanate and, later, in a water solution of cobaltous sulphate matching the color obtained from a dilution of one part of bilirubin in 200,000 parts of serum. Taking this depth of color as the unit of measurement van den Bergh showed the normal bilirubin content to be from 0.3 to 0.6 of a unit. The threshold for visible icterus has been found to be about two units and that for bile in the urine, about four units, though these relations are sometimes reversed. We have, therefore, in this fairly broad zone of "latent icterus" between 0.6 of a unit and 4.0 units, a method for the demonstration of a pathological increase of pigment at an earlier stage of disease than was heretofore possible.

SIGNIFICANCE OF VAN DEN BERGH'S TEST

Van den Bergh and others, particularly McNee, have dwelt on the theoretical deductions from these discoveries. It is beyond the scope of this paper to go further into the matter than to point out that two different bilirubin reactions are presented, the direct and the indirect, indicating that bilirubin exists in the blood stream in two different physical or chemical states. It is only fully elaborated bile, the product of normal liver cells and a normal reticulo-endothelial system, which gives the direct reaction; and this reaction is found, clinically, only when obstruction has occurred with consequent reabsorption of bile. That physical or chemical state of bilirubin which can be demonstrated only by the indirect reaction appears to be bilirubin, which is bound to a protein molecule and which, clinically, has failed of complete elaboration somewhere between its hemoglobin origin and the final state of free bile. Such failure may be presumed to be due to damaged polygonal cells of the liver lobule, or to overloading of these cells and the cells of the reticulo-endothelial system by the products of excessive blood destruction. We may note here that the bilirubin produced locally in conditions such as hematomas, pleural and abdominal hemorrhages is demonstrable only by the indirect reaction.

MCNEE'S CLASSIFICATION OF JAUNDICE

Basing his suggestion on the view that the Kuppfer cells of the reticulo-endothelial system elaborate bile pigment, and that the polygonal cells of the liver are chiefly concerned with its passage into the bile capillaries, in which passage, however, the bilirubin is affected in some way as indicated by van den Bergh's work, McNee suggests the following as the best classification of jaundice in the present state of our knowledge:

1. Obstructive hepatic jaundice.
2. Toxic and infective hepatic jaundice.
3. Hemolytic jaundice.

TECHNIQUE OF VAN DEN BERGH'S TESTS

The technique of van den Bergh's test and some of its modifications, such as that of Tannhauser and Andersen, which is the most important, is available in the literature and need not be given here. Our brief account of the method is not meant to cover working directions. Our difficulty in the application of the test has been that of others, namely, the uncertainty of getting a sufficiently close agreement in tint between the test taken, and the standard. We have found that slight adjustment of reaction by means of minimal additions of alcohol-ammonia, too small to affect quantitative relations, improves the matching of color and enables us to read the result with confidence and consistency within the limits of colorimetric determinations. This point is made by van den Bergh, but seems to have escaped most English translators and commentators.

MEULENGRACHT'S ICTERUS INDEX TEST

The other test to which we refer is Meulengracht's, announced by him in 1921 and popularized in this country by Bernheim, who gave to it the convenient name, Icterus Index. For the purpose of this test, Meulengracht assumes that the yellow color of serum is due to its bilirubin content, and he estimates this content by comparison with an artificial standard consisting of a 1:10000 solution of potassium bichromate in water. He takes this standard to indicate fifteen color units, and on this scale finds that normal serum has an index of from one to five such units; that the "first degree of jaundice" (latent jaundice) is encountered between five and ten on the scale, and visible from ten up.

Meulengracht's standard is easy to make, keeps well in the dark, and dilutions of normal and icteric serum match with it, ordinarily, very well. The preparation of the standard solution is not absolutely necessary, since an accurate colored disk for the colorimeter can be had. Serum for

TABLE 1—*Obstructive Cases with Visible Jaundice*

No.	Diagnosis	Van Den Bergh:		Ict.-Ind.	Remarks
		Direct	Indirect		
1	Catarrhal Jaundice	Positive	15.5	34	
2	Cholelithiasis	"	8.8	46	Operated on
3	"	"	Positive	30	" "
4	"	"	"	37, 68	
5	Cholecystitis Adhesions	Delayed	"		
6	Carcinoma Pancreas Diabetes	Positive	15.6 20.5	120	Blood Sugar 361 mg.
7	Ca. Stomach Liver Metastasis	Positive	4.4	25	
8	Ca. Stomach Liver Metastasis	"	9.8	75	Biopsy
9	Carcinoma Pancreas	"	35—	48	

this test must be perfectly clear and free from any trace of hemolysis.

REPORTS OF CASES

These are the two tests we have used in the cases reported on in this paper, out of a larger number from which some omissions had to be made because of insufficient clinical data. We have charted the cases as follows, viz.:

1. Obstructive cases with visible jaundice.
2. Cases of latent jaundice.
3. Hemolytic cases.
4. Miscellaneous cases in which study of liver function was indicated.

TABLE 1

A glance at this table shows that we found a positive direct van den Bergh reaction in all cases of obstruction, as has been the experience of all other observers in such cases; and likewise a high icterus index. The high icterus index was strong presumptive evidence that the hypercoloration of the serum was due to bilirubin; practically sufficient evidence in certain of the cases but not positive proof since, conceivably, it might have been due to lutein, carotin, or other of the lipochromes normally or frequently found in serum in varying quantity. The van den Bergh test by virtue of its chemical specificity settled that point and, further and what is of more importance, by the form of the reaction, namely, the direct, showed

TABLE 2—*Cases without Visible Jaundice*

No.	Diagnosis	Van Den Bergh:		Ict.-Ind.	Remarks
		Direct	Indirect		
10	Chronic Cholecystitis	Positive	Faint	13,6	Dye-X-ray
11	" "	Negative	0.9	10,00	" "
12	" "	Weak delayed	Weak positive	10,00	" "
13	" "	Negative	1.4	8,8	" "
14	Cirrhosis of Liver	Weak delayed	1.4	8,8	Wassermann Neg.
15	" "	Negative	0.9	6,3	

that the cause of the hyperbilirubinemia was obstruction.

TABLE 2

The second table shows that both tests offered help in cases of latent jaundice, the van den Bergh always being in some degree positive and the icterus index always above normal. It is interesting to see that in a case of cirrhosis of the liver, a second test two months after the first showed a less strongly positive van den Bergh and a lower icterus index concomitant with clinical improvement from duodenal drainage. Here in this group of cases, and presumably in others, one test may be as good as the other, after the hypercoloration is proved by van den Bergh's test to be due to bilirubin and not to some other pigment.

TABLE 3

The third table shows a group of pernicious anemia cases. All of these were clinically typical and some of them extreme, with red cell counts as low as 500,000 and hemoglobin as low as 15 per cent. In one of the patients five tests were made during the course of treatment (by transfusion) and in this patient, as may be seen in the table (19 to 23 inclusive), the van den Bergh reaction varied from time to time in agreement with apparent clinical improvement and improved blood picture. Three of the cases were seen in remission and, as the table shows, might have been mistaken for secondary anemia if seen in this stage for the first time and if dependence had been placed on the blood count and the color index. The indirect van den Bergh reaction at once classified them correctly, as pernicious anemia. It is in this group of cases, namely, hemolytic icterus from whatever cause, that we encounter the form of bilirubin which gives a positive indirect reaction without a positive direct reaction. The icterus index was invariably high in all cases in this group including the three seen in remission.

TABLE 4

In the fourth table are shown eighteen cases of various conditions in which liver dysfunction or damage or a hemolytic process was suspected, partly because of a high icterus index which had been found previously in all of them. The peculiar value of the van den Bergh test is manifested in this group by its exclusion of liver damage or hemolytic process in certain of the cases in spite of the high icterus index. Case 31 is illustrative; clinical symptoms gave reason for suspecting disturbance of liver function and the icterus index was high. The van den Bergh reaction, however, was negative—that is to say, normal. The correctness of the van den Bergh reaction was tested in this patient by another highly sensitive method for the detection of liver damage, namely, Rosenthal's dye test, the result of which was the excretion of the dye as follows: present after five minutes, 5 per cent; after fifteen minutes, a trace only; after half an hour, none—in other words, a normal result in agreement with the van den Bergh reaction. The ultimate diagnosis in this patient was chronic appen-

dicitis, a conclusion which has been justified by several months' observation since these tests were made.

Case 35 is another one in point. The van den Bergh reaction was negative, but on the basis of clinical symptoms and a high icterus index a diagnosis of chronic cholecystitis was made; at operation the next day the gall bladder was found to be normal. It was a case of chronic appendicitis.

Three cases in this fourth table suggest that the icterus index was right and the van den Bergh test wrong, namely, cases 32, 33 and 36, or at least that the icterus index method was successful in indicating liver pathology and the van den Bergh test failed. Plainly this is true so far as the failure of the van den Bergh test is concerned in these three cases, but a glance at a larger number of cases in this group in which the two tests did not agree will show that a high icterus index is sometimes merely incidental and suggests that it may have been so in these cases. It is a fact that the van den Bergh test gives us little or no help in the group of toxic and infective jaundice cases, the common run of cases in which help would be most desired. This is its shortcoming. On the other hand the icterus index carries with it the danger of "false positives," and perhaps more so in this part of the world where we are permitted such a full and varied diet.

The direct van den Bergh reaction was negative in all cases in the fourth group as would be expected since obstruction was not in question in any of them.

The secondary anemia cases in the fourth table show negative direct reactions and either normal or subnormal indirect reactions, in agreement with the reported findings of others; the differentiation from pernicious anemia is very clear.

Three cases included in the fourth table are there chiefly because of their clinical interest: one a case of acute lymphatic leukemia which came to autopsy; one a case of Hodgkin's disease; and one a case of Addison's disease. As was to be expected all three gave negative van den Bergh reactions.

TABLE 3—*Hemolytic Cases*

No.	Diagnosis	Van Den Bergh: Direct	Van Den Bergh: Indirect	Ict.-Ind.	Remarks
16	Pernicious Anemia	Negative	1.5	42	
17	" "	"	8.3		Red cells 525,000 Hemoglobin 32
18	" "	"	2	15	
19	" "	"	4.8	30	Red cells 7,000 Hemoglobin 18
20	" "	"	2.4	10.7	Transfusion 5 days previously. Red cells 120,000 Hemoglobin 23
21	" "	"	Positive	15	Red cells 2,020,000 Hemoglobin 48
22	" "	"	2.9	12.5	Red cells 1,880,000 Hemoglobin 38
23	" "	"	1.4	21	Red cells 1,970,000 Hemoglobin 38
24	" "	"	Positive	7.5	Red cells 2,020,000 Hemoglobin 48
25	" "	"	2.5	16.6	Red cells 1,570,000 Hemoglobin 38
26	" "	"	1.1		In remission: Red cells 3,800,000 Hemoglobin 67 Color index 0.9
27	" "	"	2.3	10	Red cells 2,100,000 Hemoglobin 60
28	" "	"	0.9	10	In remission.

TABLE 4—*Miscellaneous*

No.	Diagnosis	Van Den Bergh: Direct	Van Den Bergh: Indirect	Ict.-Ind.	Remarks
29	Flageliatae Infection	Negative	Normal	15	
30	" "	"	"	10.7	Red cells 4,330,000 Hemoglobin 85
31	Chronic Appendicitis	"	"	15	Rosenthal dye test
32	" "	"	"	17	Operated on: Appendicitis and 1 stone in thickened gall bladder.
33	Chronic Cholecystitis	"	"	12	
34	Syphilitic Hepatitis	"	1.6	12.5	Wassermann 4+
35	Chronic Cholecystitis	"	Normal	15	Operated on: Gall bladder normal Chronic appendicitis
36	Liver Cirrhosis	"	"	10.7	
37	History of Malaria	"	2.8	15	Mild jaundice Urobilinogen in urine.
38	" "	"	3.3	12	Red cells 4,500,000 Hemoglobin 90
39	" "	"	2.9	15	
40	Secondary Anemia	"	Normal	12.5	Red cells 2,210,000 Hemoglobin 40
41	" "	"	Below Normal	7.5	Red cells 2,800,000 Hemoglobin 55
42	Chronic Nephritis Secondary Anemia	"	"	6.24	Red cells 2,530,000 Hemoglobin 42
43	Acute lymphatic Leukemia	"	Normal		
44	Hodgkins disease	"	"		
45	Addison's disease	"	"	8	
46	No definite symptoms	"	"	12	Red cells 4,280,000 Hemoglobin 85

SUMMARY

A series of cases is reported comprising (1) obstructive visible jaundice, in which the van den Bergh test and the icterus index agree; (2) latent jaundice cases, in which the two tests agree; (3) pernicious anemia cases, showing the same agreement; (4) a variety of clinical cases, in some of which the two tests did not agree.

CONCLUSIONS

On the basis of the work here reported we conclude (1) that both van den Bergh's test and Meulengracht's test (the icterus index) are of clinical value; (2) that, whatever its shortcomings, the van den Bergh test is not misleading; (3) that the icterus index, since it does not distinguish between bilirubin and other substances

which color blood serum, may be misleading unless it is controlled by the van den Bergh test or some other specific test for bilirubin; (4) that the van den Bergh test is an aid to the differentiation between obstructive and non-obstructive jaundice, in which respect the icterus index is of no assistance.

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DISCUSSION

Roy W. Hammack, M. D. (1003 Pacific Mutual Building, Los Angeles)—Doctors Segall and Terry have given us an interesting and instructive comparison of these two tests for bile pigment in the blood. All will agree, I believe, that the van den Bergh test gives us more information than the icterus index though at the cost of somewhat more effort.

I was surprised to see in the report so many instances of high icterus index in which the presence of bilirubin was not shown by the van den Bergh test. This emphasizes the importance of controlling the high icterus index by a specific test for bilirubin. Provided it is so controlled I believe that the icterus index is a more accurate quantitative test and is more easily performed than the quantitative van den Bergh.

Our knowledge of jaundice has been greatly increased by the study of the blood by these methods and this compartive study is no small contribution to that knowledge.

✲

Charles L. Bennett, M. D. (607 South Hill Street, Los Angeles)—This paper by Segall and Terry calls attention to a particularly valuable quantitative test for bilirubin in the blood stream. Jaundice means increased bilirubin in the blood, and the proper interpretation of the amount and kind means much in exact diagnosis of forms of anemia and obstructive diseases of the biliary ducts. The indirect test is always positive when bilirubin is present in the blood stream and is valuable in differentiating pernicious anemia with its extensive destruction of red blood cells. When bilirubin passes through the polygonal hepatic cells its molecular structure is changed and here the direct van den Bergh test is positive and, when present, indicates resorbed and molecularly changed bilirubin due to biliary duct obstruction. Attention should be called to the fact that jaundice of the "invisible variety" (*i. e.*, before becoming evident to ordinary sight) can be diagnosed. Also the van den Bergh is not a mere color test as is the icterus index. The latter gives a positive reaction with other pigments, while the van den Bergh is a definite chemical reaction for bilirubin, with all the advantage accruing from the fact that it cannot be confounded with any other substance. This paper is timely in its emphasis of a specific procedure, harmless for the patient, and simple for the clinician.

✲

Arthur L. Bloomfield, M. D. (Stanford University School of Medicine, San Francisco)—Doctor Segall's and Doctor Terry's observations are in accord with those of other workers. In regard to the value of the two tests for the detection of hyperbilirubinemia there is now quite general agreement that the van den Bergh is more delicate and accurate. Whenever this can be performed it is undoubtedly the method of choice, and the icterus index should be reserved as a simpler and a less accurate method. The technical difficulties connected with the van den Bergh test are, however, considerable, and unless the procedure is performed with the greatest care, it may be more satisfactory to employ the simpler though less accurate method.

✲

Doctor Segall (closing)—Regarding the relatively large number of cases showing a high icterus index as against no abnormal quantity of bilirubin by the van den Bergh test in the same case, this is precisely what we want to bring out: that the van den Bergh test is a specific qualitative and quantitative test for bilirubin. The icterus index is not specific for bilirubin. The only way possible at present to correct misleading returns by the icterus index method, is by use of the van den Bergh test, properly done. We therefore consider the icterus index as less accurate. As to technical difficulties in doing the van den Bergh test, we have been able to overcome them.

LIPIODOL—ITS USE IN PULMONARY SUPPURATONS*

By E. Richmond Ware, M. D.
Los Angeles

Discussion *by William C. Voorsanger, M. D., San Francisco; Ernest H. Falconer, M. D., San Francisco; A. L. Bramkamp, M. D., Banning.*

A SATISFACTORY clinical and anatomical diagnosis in a large number of suppurative conditions of the lungs has always been a difficult problem. Lung abscess and bronchiectasis are frequently suspected from the history alone, and physical and routine roentgenological examinations usually give valuable additional information. However, the accurate localization of the pathology and the discovery of all the involved areas have often been impossible, with the result that attempts at treatment by the various methods at our command have not been very encouraging. In lipiodol, or iodized oil, we have a non-irritating fluid substance which can be safely introduced into the tracheobronchial tree. It is opaque to the x-ray and will clearly demonstrate the outline of intrapulmonary cavitation in the bronchi themselves, or in the various portions of the lung parenchyma which have direct connection with the larger bronchi.

LIPIODOL

Lipiodol is a golden yellow, oily substance, fairly viscid, becoming more fluid at body heat, with a content of 40 per cent metallic iodin. The iodin is in a close combination with the oil of poppy seed and fails to give the usual starch reaction. It has a characteristic odor, and on standing undergoes decomposition, with the liberation of free iodin, as indicated by the appearance of a brownish tint. Such a specimen is unfit for use.

HOW LIPIODOL IS USED

In addition to its use in the respiratory tract it has been employed to demonstrate the spinal canal, the vas deferens, the seminal vesicles, the patency of the fallopian tubes, the size and character of

* Read before the California Medical Association Section on General Medicine at the Fifty-Sixth Annual Session, Los Angeles, April 25-28, 1927.

the sinuses of the head, and the course of varions tracts connected with areas of chronic suppuration, as well as cold abscesses in numerous locations. Its introduction into the bronchial tree can be by the supraglottic, transglottic, infraglottic, or bronchoscopic route. The transglottic and infraglottic methods have not been employed in any of the cases of this series. It seems hardly necessary to introduce a catheter between the vocal cords as is necessary in the transglottic method; and the infraglottic approach pierces the cricothyroid membrane and injects the oil directly into the trachea by means of a curved metal cannula similar to the type used in abdominal paracentesis. The supraglottic method has been employed in the greatest number of cases, and causes very little inconvenience to the patient. After moderate local anesthetization of the pharynx, vocal cords, and upper portion of the trachea, the lipiodol is slowly dropped upon the open glottis during inspiration. If the patient refrains from coughing or swallowing, it readily descends the trachea and will enter the most dependent portion of the lung. Fortunately most of the diseased area is located in the lower lobes, and the area to be filled can be selected by tilting the patient to the involved side. The upper lobes may be fairly well demonstrated by tipping the table so that the head is lowered and the feet elevated. The amount used varies from 10 to 35 cc., and it is best to attempt to fill no more than two lobes at a single sitting. A roentgenogram should be taken at once, before the patient has coughed. Lateral or oblique as well as anteroposterior views should always be included. The bronchoscopic method has given us some of our best pictures, especially in cases where a large cavity exists. It has the advantage of introducing

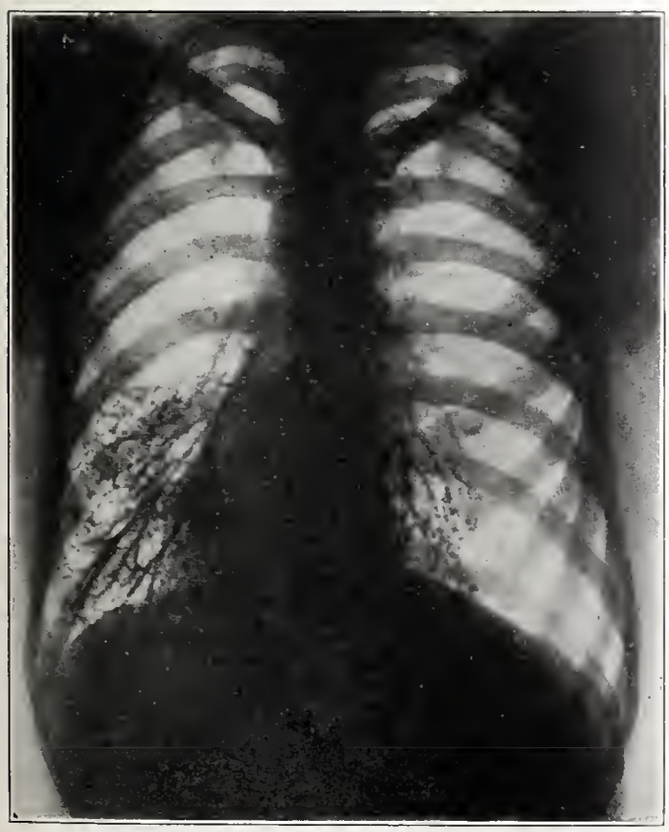

Fig. 1—Lipiodol injection of both lower lobes. Normal picture.

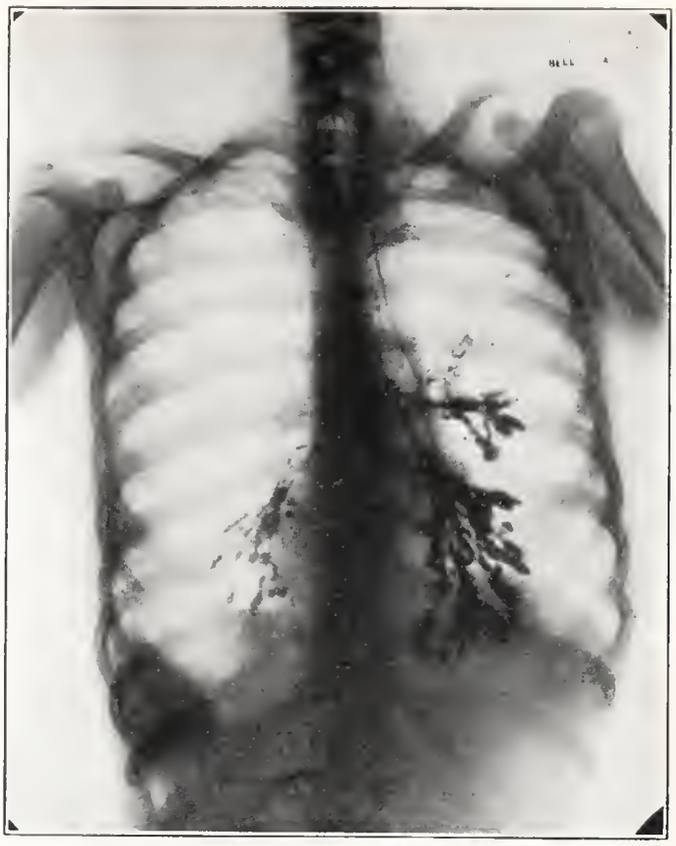

Fig. 2—Lipiodol injection of both lower lobes. Extreme degree of bronchiectasis. Bronchiectatic cavities filled with lipiodol. Trachea well outlined, giving the so-called "bunch of grapes" appearance. (Courtesy of Dr. O. H. Homme.)

the lipiodol directly into a specific bronchus, permits a view of the mucous membrane and allows the aspiration of pus or mucus, which often acts as a plug in the very tube which one is most anxious to outline. However, the passage of a bronchoscope, even in the most skillful hands, represents an ordeal for the patient, and its use must be confined to a small group of highly trained men. I feel that satisfactory results can be obtained by the simpler supraglottic injection in almost all cases of bronchiectasis. However, in lung abscess it is frequently impossible to get a proper filling by the supraglottic method, when a very good result may be obtained by the use of the bronchoscope.

CHIEF DIAGNOSTIC VALUE

Lipiodol's chief diagnostic value is seen in suppurative conditions such as bronchiectasis, lung abscess, and empyema. It has also been used to determine the extent and value of lung compression by pneumothorax or thoracoplasty, as well as to locate any additional pathologic areas in cases of pulmonary tuberculosis. It must be remembered that a large part of the pulmonary field at the left base is obscured by the heart shadow; also, the diaphragm outlined radiologically indicates merely its extreme center and highest portion, as it is actually a true dome, higher in the center than peripherally. There is a considerable amount of pulmonary tissue which contains numerous fair-sized bronchial radicles below the level of the outline of the diaphragm. Fairly extensive disease may be present in this area as well

as behind the heart and yet not be suggested in the average stereoscopic plate of the chest.

The normal bronchial outline, when filled with lipiodol, can best be described as a tree with its single large trunk breaking up into smaller branches, which terminate in the spotty foliage represented by the alveoli. The large trunks usually are not filled solidly, but their walls are outlined by two parallel lines which, in the smaller bronchi, are fused into a solid column. This in turn breaks up into sharply outlined linear shadows that terminate in the speckled and splotchy areas of the lung parenchyma. Coughing expels a part of the oil from the bronchi into the alveoli and results in interruption and breaking of the solid bronchial columns. The lipiodol disappears quite rapidly from the bronchi themselves, but remains for several weeks and sometimes two or three months in the alveoli. Here it loses its dense and sharply outlined shadow and often has an appearance very suggestive of a diffuse and active pulmonary tuberculosis, frequently resembling a miliary infection. The lymphatic drainage of the oil toward the glands at the hilum occasionally gives them a very dense shadow in the picture which may suggest calcified glands at the lung roots. Such pictures might well give an erroneous interpretation to a chest plate if the observer were unacquainted with a history of lipiodol injection.

The earliest indications of bronchiectasis are a widening of the bronchial columns, which become fusiform in shape. These later take on a bulbous character, and in extreme cases have a so-called glove-finger appearance. Occasionally the shadow of several closely associated bronchi looks like a cluster of grapes. These are frequently superimposed upon each other to give the appearance of a single large cavity. However, if views are taken in more than one plane this mistake may be avoided. Cylindrical and large sacculated cavities are other characteristic types of advanced bronchiectasis.

Large abscess cavities are frequently not single, and bronchiectasis is often an associated complication. This explains the not uncommon failure of a cure following the aspiration and drainage of a cavity. A type of abscess which is difficult to demonstrate either by the usual roentgenogram or by lipiodol injection is the narrow-necked abscess described by H. C. Ballon. Here the sputum represents merely an overflow, and the actual cavity is probably never completely emptied. However, some of these cases can be injected if bronchoscopic suction is employed before filling with the oil.

LIPIODOL IN PULMONARY TUBERCULOSIS

There is a difference in opinion as to the advisability of injecting lipiodol in cases of pulmonary tuberculosis. Most authors have avoided its use in these cases, but it has been frequently employed in Archibald's clinic, and Ballon endorses its use in certain types of cases. All agree that it should be avoided in toxic cases of pulmonary tuberculosis, with progressive lesions of the exudative type. In patients with good fibrosis, oil injection may be advisable to determine a supplementary bronchiectasis that is often unsuspected and may be responsible for a large part of the persistent catarrhal symptoms. Sometimes cavitation or bronchiectasis that has not been collapsed by a thoracoplasty can be demonstrated and localized by lipiodol, permitting further operative procedures to close the remaining areas of suppuration. In one of our cases the oil produced a definite increase in cough and expectoration, with the appearance of tubercle bacilli in the sputum. These had never been found previously in a long series of examinations. However, the increase in symptoms persisted only a few weeks and was not permanent. Many cases of advanced pulmonary tuberculosis have dilated bronchi and secondarily infected cavities, which may not be seen in the usual roentgenogram. The presence of such infection in the opposite lung would be a distinct contraindication to compression by pneumothorax or thoracoplasty, and might be brought out only by lipiodol injection.

If there has been a recent lung hemorrhage from tuberculosis or from any other cause, injection should be postponed for at least a week. I have seen no serious results from lipiodol, and any toxic absorption can usually be traced to swallowing during supraglottic injection or to ingesting some of the coughed-up oil which has already entered the pulmonary passages. Doctor Pritchard of Battle Creek reported in a personal communication that he had seen two cases of severe diarrhea which followed the use of 40 cc. We have had one case of diarrhea after 30 cc. were injected in a patient who had a larve cavity in addition to bronchiectasis. This lasted for about two weeks, but was accompanied by a concomitant improve-

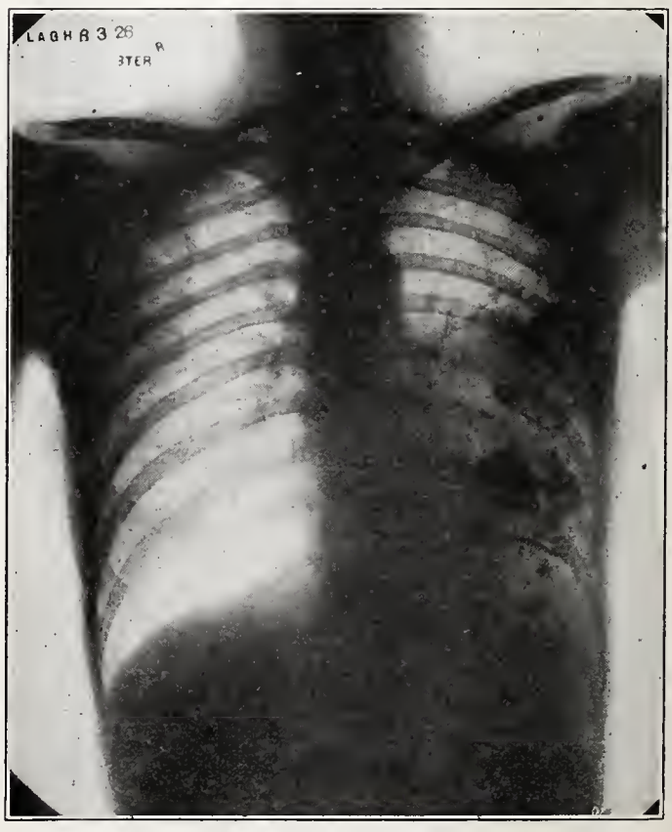

Fig. 3—Intercommunicating bronchiectatic abscess cavities outlined by lipiodol in left lower lobe. Extensive surrounding pneumonitis.

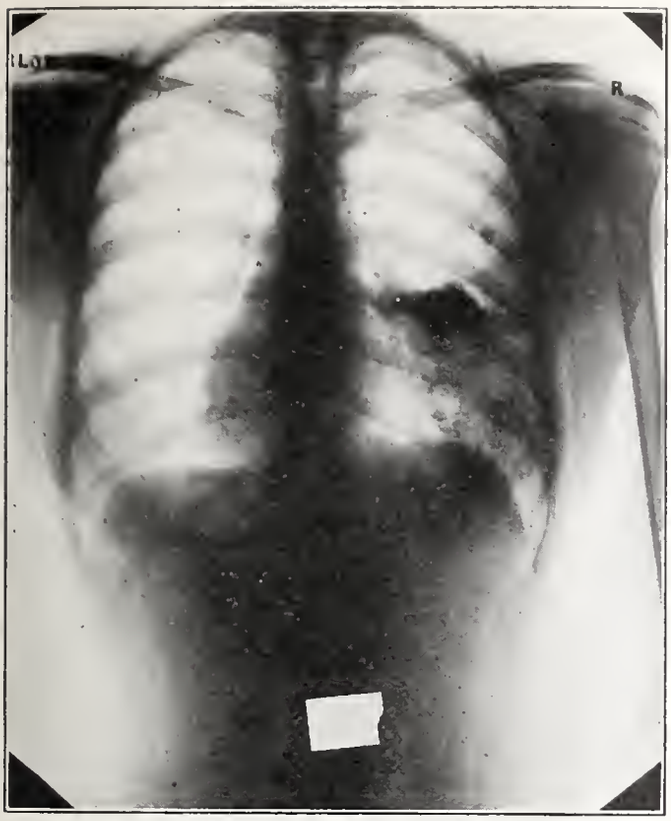

Fig. 4—Cavity filled with lipiodol thought to be non-tuberculous. Following injection tubercle bacilli appeared in sputum. None found previously.

ment in every other respect. I have read of two patients developing headache, malaise, coryza, and conjunctivitis, and an occasional morbilliform rash has been reported. The only two fatalities I have been able to discover were due to myocardial failure in one instance, and in the other the lipiodol was injected in a patient seriously ill with an exudative type of tuberculosis. On the whole, disturbing or alarming reactions have been extremely rare.

COMMENT

Lipiodol was first used purely for its diagnostic value in demonstrating the character and position of cavities and sinuses in various areas. However, it is becoming evident that it has decided therapeutic properties. We have had striking examples of this, and are employing it in cases of bronchiectasis with injection at intervals of one or two weeks. The patient mentioned above, in whom lipiodol produced a persistent diarrhea, showed a definite and unexpected improvement following a single injection, which demonstrated a large cavity with several smaller bulbous bronchial enlargements. From a progressive septic state the entire picture changed, with a disappearance of fever, leukocytosis, and anemia, reduction of cough and sputum, and a progressive gain in weight and strength to normal. Enough time has not elapsed to gauge the full value of lipiodol in the treatment of lung suppurations. In well-established lung abscesses of considerable size there can probably be very little therapeutic result; however, it is evident that it is of undoubted value in cases of multiple bronchial dilations which are not too extensive. Heretofore the outlook for these patients has not been encouraging. Pneumothorax and phrenecotomy have not been satisfactory, and thoracoplasty is a radical operation with high mortality and attended by considerable permanent deformity. All of these three procedures are applicable to unilateral cases only. Postural drainage and change of climate have been about the most successful recommendations we have been able to offer. In lipiodol we have a remedy which is safe and, in addition to its diagnostic value, seems to possess very striking therapeutic properties.

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DISCUSSION

William C. Voorsanger, M. D. (490 Post Street, San Francisco)—Lipiodol or iodized oil, first introduced by Siccard to diagnose lesions of the spinal cord and then popularized by Forestier in pulmonary conditions, has proven a valuable diagnostic aid. I am glad to hear Doctor Ware deprecate the transglottic method, although I have seen Forestier use this method without any discomfort to the patient. It requires skill and practice, however. Armand Delille uses the small canula in children, piercing the cricothyroid membrane without discomfort to the patient. Chevalier Jackson, expert with the bronchoscope, employs this instrument in the use of lipiodol. I agree fully with Doctor Ware that lipiodol can be introduced very easily with a straight canula attached to an ordinary 20 cc. syringe, often by simply anesthetizing the pharynx. This method requires but moderate skill, and practice and excellent roentgenograms can be obtained with it. In localizing lung abscess I would suggest first doing a partial pneumothorax and then introducing lipiodol. In this way the clear and more definite walling off may be obtained.

I cannot agree with Doctor Ware that lipiodol is of any diagnostic value in pulmonary tuberculosis. It rarely, in this disease, gives any information not obtainable by x-ray plates and may cause great damage, particularly in inducing hemorrhage. Lipiodol has been of great aid in demonstrating bronchiectatic cavities and dilated bronchi back of the heart shadow, and should be primarily reserved for non-tuberculous pulmonary conditions. Doctor Ware's observation that no serious results ensue from the use of lipiodol coincides with the opinion of most men who are using it routinely. Toxic absorption usually happens when lipiodol is swallowed, the oil disintegrating in the stomach and liberating iodin. If the stomach is fluoroscoped after the introduction of lipiodol we can readily see if any has been swallowed and if so by immediately washing it out prevent absorption. Lipiodol often stays in the lung tissue months or years without apparent damage.

Regarding the therapeutic value of iodized oil reports to date are anything but conclusive. Armand Delille in treating bronchiectasis in young children has noticed a definite cessation of cough after the introduction of lipiodol. This may be due to the filling of a small cavity with thin walls. If the oil is retained long enough the cavity may close. This would hardly apply to the bronchiectatic cavity of an adult where the walls are much thickened. I have personally never seen a definite therapeutic effect which could be attributed to lipiodol *per se*. Still it has possibilities, and we should observe experiments in its use with open minds and unbiased judgment. Doctor Ware has presented this entire subject in an excellent manner, and no doubt his experiences will stimulate a wider use of this valuable diagnostic method.

Ernest H. Falconer, M. D. (384 Post Street, San Francisco)—Lipiodol has now been in use long enough to enable one to know something of its limitations, as well as its possibilities. About one year ago, when in Montreal, I saw some films of cases that had been injected by H. C. Ballon with the bronchoscopic method. These films outlined bronchiectatic dilatations that had been entirely missed by the supraglottic

method. Success in certain cases undoubtedly requires the use of the bronchoscope, plus skill in its use. The supraglottic method, on account of its simplicity, has a much wider range of usefulness.

Doctor Ware has covered the uses of lipiodol well, also pointing out that it is toxic in an occasional case. As a result of the widespread use of this agent we are getting an increasing number of reports of toxic reactions, some of them quite severe.

As to the therapeutic value of lipiodol in pulmonary suppurations, opinion seems much divided. I do not feel at this time very much encouraged over its therapeutic possibilities. One should, however, await more data on this particular phase of its use.

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A. L. Bramkamp, M. D. (Banning)—The use of the x-ray, especially stereoscopic, in the diagnosis of the chest condition marked a great advance. For one thing, it showed some of the limitations of physical examination. In the use of these two methods of examination, x-ray and physical, however, each is a check on the other, and best results follow the judicious use of both. Introduction of the method of lipiodol injection into pulmonary areas for diagnostic purposes has carried diagnostic efficiency still further, and has demonstrated additional limitations not only in physical examination of the chest, but has also shown surprising limitations in even the stereoscopic x-raying of the lungs; particularly as to conditions below the top of the diaphragm and behind the heart. There is now to be had assurance as to actually existing conditions in the pulmonary area where formerly guesswork obtained to a considerable extent. Even the most skilled in physical examination and in x-ray find the possibilities of definite diagnosis in certain cases wonderfully extended. All this has been brought out in Doctor Ware's excellent paper, and in previous discussions.

As to methods of introducing lipiodol, or any substance that may displace it, into the lungs, it would seem the bronchoscopic method comes nearest being the ideal, since it makes possible most certain and accurate placing of the opaque substance.

However, if the use of lipiodol is to find the general and perhaps frequent application to which it now seems entitled, some method or methods requiring less special equipment and training must be available. This need seems to be met in the supraglottic and the transglottic methods, which the training of any throat or chest specialist and that of many other practitioners enables them easily to master, and which gives excellent results.

The possibilities and limitations of lipiodol injections are rapidly being established. There are also suggested possibilities of its therapeutic value.

As to the use of lipiodol in cases of tuberculosis, Archibald, Iglauer, Bronfin, and others, regard it as innocuous, except in cases with fever of recent hemorrhage. Iglauer has made this noteworthy of observation: that in two cases of chronic pulmonary tuberculosis in which sputum examination had been negative repeatedly for a long time, promptly after the injection of lipiodol numerous tubercle bacilli were found. The subsequent course of these cases was not influenced adversely.

Mosher calls attention to inundation, or saturation areas, that he calls false abscess, resulting from bronchoscopic injections of lipiodol, that closely simulate real abscess. Here the parenchyma is flooded by the injection. He suggests that weaker injections of lipiodol must be used or, better still, that the oil must be introduced with a nebulizer, and he is working on this phase of the problem.

These facts need emphasis: first, that lipiodol must be adequately introduced; second, that there must be competent interpretation of the films.

SINUS SUPPURATIONS—THEIR SURGICAL TREATMENT *

By J. Frank Friesen, M. D.

Los Angeles

Discussion *by Edward C. Sewall, M. D., San Francisco; F. H. Brandt, M. D., Los Angeles, Frank A. Burton, M. D., San Diego.*

IN reviewing the literature on the surgical treatment of frontal sinus suppurations, one is impressed by the fact that there is a great difference of opinion in the procedure of treating these infections. Certain rhinologists seem universally successful with the intranasal operation and are apt to criticize colleagues who prefer operating by the external route. Fortunately most acute frontal sinus infections are of a mild character and recover without surgical intervention. In the majority of those who require surgical aid effective drainage can be insured by enlarging the frontoethmoidal passage intranasally; this should be the operation of choice in the uncomplicated simple suppurative process. Structural alterations in the anterior end of the middle turbinate, polypi, granulations, or a nasal septum deviated to the affected side, may interfere with proper drainage and should be corrected.

INDICATIONS FOR EXTERNAL OPERATION

The question arises as to when external operation is to be preferred. The anatomical and pathological condition of the sinuses should be studied from all angles. Sinuses do not drain well if the roentgenograms show them to be large, with backward extension along the orbital wall. Incomplete septa give rise to the formation of pockets and recesses, which interfere with the cure in chronic suppurations. Pathologic changes affecting the mucous membrane, periosteum, and bone, call for eradication of the lesion by an external method. Conservative measures should not be attempted in the presence of cerebral and orbital complications. Conservatism is often used to cover a timidity or a surgical insufficiency. An external operation is not a dangerous procedure, nor is it necessary to produce an unsightly scar. Success depends upon good surgical judgment and employment of the proper technique in the type of operation performed.

TYPES OF OPERATION

When only one frontal sinus is affected the Lynch[1] operation has given me good results. In one of the cases here reported, where an attempt had been made to carry out the Lynch technique, failure was due to incomplete removal of the anterior ethmoid cells, and to a collapse of the outer wall of the nasofrontal passage, as the result of a large resection of the orbitonasal bones.

Another operation commonly used is the Killian,[2] but so many failures are reported that it is in disrepute. The aim in Killian's operation is to remove all diseased tissue and bring about an

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obliteration of the sinus. This is fairly successful in a small sinus, but in large cavities the result is an incomplete obliteration, closure of the nasofrontal canal and reinfection.

In the three cases reported here I chose the Lothrop[3] operation, because both sinuses were diseased and complicated with fistulae. The Lothrop operation insures success by establishing better drainage than can be obtained by other methods. This is accomplished by a judicious removal of the nasal floor of the sinus, which consists of a dense mass of bone directly behind the base of the nose, made up in part by the frontal, nasal, and the nasal process of the superior maxillary bones. This interfrontal body is too dense and inaccessible to be removed with a curette or the ordinary bone instruments. Lothrop advised using burr drills; this, however, is not practicable in most operating rooms. I have had success in using a right-angled bone-cutting forceps. When both sinuses have been involved, part of the perpendicular plate of the ethmoid, the upper anterior part of the nasal septum, was also removed. The operation is a safe procedure if the anatomy of the floor is thoroughly understood, and the posterior angle of the sinus constantly avoided. The frontal ostium marks the safety zone into which a probe is passed and left *in situ* as a guide. The region posterior to the ostium is in close proximity to the cribriform plate. The anterior ethmoids are part of the floor of the nasal portion of the frontal sinus, hence suppurations usually coexist in both sinuses and in nearly all instances were removed. The posterior ethmoids and turbinates were left, and the function of the nose was not disturbed. In some of the following cases the antrums were diseased or acted as a reservoir and were drained.

CASE REPORTS

Case 1—J. W., a man aged 50, three days before entrance into the hospital, developed an acute head cold with a severe headache and pain in the frontal region over the right eye. On May 12, 1926, he was admitted to the hospital with the following findings: marked edema and tenderness over the region of both frontal sinuses; an acute inflammatory swelling of the right orbital tissues near the internal canthus, which was followed by an orbitofrontal fistula the following day; a profuse purulent secretion from both nasal passages, the right being completely blocked by a deflected septum. The diagnosis of acute empyema of both frontal sinuses was confirmed by roentgenograms. Both maxillary sinuses were likewise affected.

On May 15, three days later, the Lothrop operation was performed. The right sinus was opened by enlarging the frontal ethmoidal fistula and removing the thin necrotic bone of the orbital portion of the floor of the sinus. The interfrontal septum had a perforation, and both sinus cavities were filled with pus. The floor of both sinuses was removed and the sinuses were curetted. A quarter-inch rubber tube drain was inserted into each sinus through the nasal passages and left in position for several days. The external wound was closed, but due to the virulence of the infection, the tissues began to slough. The opening, when sutured, healed properly. The maxillary sinuses were treated by draining through an opening under the inferior turbinate. This fulminating type of infection was caused by the staphylococcus aureas. The patient was examined again six months after the operation. He was practically free from any nasal symptoms. The vision was normal in both eyes. He did not have any of the untoward sequelae that sometimes follow the radical frontal operation.

Case 2—A girl, aged 15, was admitted to the hospital on February 17, 1926. Two weeks before entrance a swelling commenced in the orbital tissues of the right side. The swelling gradually became worse, opened, and discharged pus. The patient was referred to the eye service with the diagnosis of an orbital abscess. Further examination revealed an empyema of both frontal and maxillary sinuses. The antrums were drained through an intranasal window operation. As both frontal sinuses were affected, with a frontoorbital fistula on the right side, the external operation according to the method of Lothrop was done on March 4, 1926. The fistulous tract from the right orbit into the sinus was enlarged and numerous sequestra of bone removed from the orbital floor of the sinus. The interfrontal septum had a large opening and both sinus cavities were filled with pus and polypoid material. The nasal floor of both frontals, consisting of a hard mass of bone, and the upper part of the nasal septum was removed with bone-cutting forceps. A fenestrated rubber drainage tube was placed in the nose and made to extend into the right frontal sinus. The external wound was closed and healed promptly. The organisms in this infection were the staphylococci and the pneumococci. The patient was discharged April 18, and two months later reported that she was free from nasal and eye symptoms.

Case 3—This case presents the difficulties encountered in curing an obstinate frontal sinus infection and hence will be considered in more detail.

History—A woman, aged 60, developed an acute fulminating left frontal sinusitis. She consulted an otolaryngologist, who removed the anterior part of the left middle turbinate to promote drainage. After three weeks an intranasal frontal sinus operation was performed which gave her some relief. The drainage, however, proved inadequate and the nasofrontal opening was again enlarged. After four months of intranasal surgery and treatment, swelling and redness made its appearance at the inner left orbital region and she was referred to the Los Angeles General Hospital.

Examination—There was a suppurative sinusitis involving the left frontal, ethmoid and maxillary sinuses. The left orbital tissues in the region of the ethmoid area were red and edematous, and in a few days began to break down, with discharge. The general examination of the patient was negative.

Operation No. 1. On September 2, 1925, an external operation of the Lynch type was performed under ether anesthesia. A curved incision was made under the supra-orbital margin and along the side of the nose, the fistulous opening was enlarged, the anterior ethmoidal cells were removed, the frontal sinus was curetted, and the nasofrontal channel was enlarged. The external wound was closed. Daily nasal irrigations were instituted and the patient showed a gradual improvement, with external wound healing. In one month, however, the frontal sinus again commenced to drain through the orbital fistula, and the patient relapsed into her former condition. The pain and swelling about the eye increased. The sinus was then irrigated daily through the external opening.

Operation No. 2. On October 7, 1925, under general anesthesia the left frontal was opened through the anterior wall, leaving a bridge of bone and periosteum, after the method of a modified Killian. The cavity contained polypoid material and pus. There was a communication with the right frontal, which also was infected and contained pus. The septa and the granulations and mucous membrane of the cavities were removed. The right frontal opening into the nose was enlarged and the external wound kept open with a rubber drain into the nose. The sinuses were irrigated through the external opening, and the patient was fairly comfortable. At frequent intervals the orbital tissues would show signs of reinfection from

the continuous discharge. The nasofrontal opening gradually filled in with granulations. A number 5 frontal sinus dilator was readily passed into the sinus; but on withdrawal the opening collapsed, due to the previous naso-orbital bone resection, and to the falling in of the outer nasal wall. The sinus cavities were irrigated, the granulations in the frontal opening were cauterized for several months, and still there was no improvement in the patient's condition. The drainage seemed to be inadequate, and another operation was advised.

Operation No. 3. On February 11, 1926, the patient then came under my observation. I chose the Lothrop technique as giving the best drainage in a bilateral infection. The patient was again etherized. The fistulous opening on the left side was enlarged, so that it was possible to inspect thoroughly both sinus cavities with a reflected light. By means of Coakley's curettes, polypoid and granulation tissue was exenterated. The interfrontal septum had been partially removed in a previous operation. The nasal floor between both sinuses and the upper part of the nasal septum were taken out with bone-cutting forceps, the nasal floor consisting of a mass of dense bone, being part of the frontal, nasal and the nasal process of the superior maxillae. This procedure made one common opening into the nose from both sinus cavities, providing free drainage. A quarter-inch rubber drain was inserted into the left sinus through the nose and left in position for five days. The external wound was closed. The posterior ethmoids and middle turbinates were not disturbed. A few weeks later the left antrum was drained below the inferior turbinate. The postoperative care consisted in cleansing irrigations. The frontal cavities were readily accessible to treatment; the opening providing free drainage and ventilation at all times. The patient complained of a diplopia and a numbness over the brow which gradually disappeared. The patient was seen a year after the operation. A probe could be readily passed into each frontal sinus, and she was free from all nasal symptoms. The vision in both eyes was normal.

SUMMARY

The striking feature of these cases was the immediate closure of the fistulae, which proves that reinfection is due to obstruction of the nasofrontal canal.

By establishing free drainage and making the sinus accessible to intranasal treatment, successful results will follow.

The Lothrop operation is to be especially recommended, as he stated in his original article, for (1) cases in which previous operations have failed; (2) those in which both sinuses are diseased; and (3) sinuses with fistulae.

614 Merritt Building.

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DISCUSSION

Edward C. Sewall, M. D. (Stanford University Hospital, San Francisco)—I congratulate Doctor Friesen on the excellent results that he reports. The last case is especially noteworthy and the result a confirmation of his judgment in the selection of the type of operation that he employed.

I agree with his views as to the relative value of intranasal and extranasal work. Where intranasal methods will suffice they, of course, should be chosen. With modern clinical methods of diagnosis, emphasizing particularly the use of stereoscopic x-ray pictures from different angles, certain cases are known to be unsuited for intranasal work.

In regard to Killian and his operation, we must thank him for having introduced most important principles of surgical drainage. Most of the operations employed are modifications of his method. Lothrop added a very important feature which helps to overcome the poor drainage apt to follow where the removal of bony walls allows the falling in of the soft tissues.

While Doctor Friesen mentions only general anesthesia, I presume that he uses local anesthesia in suitable cases. I employ novocain preceded by scopolamin and morphin as a routine, only using general anesthesia where some circumstance makes it advisable. The operative procedures are practically bloodless, especially where the ethmoid arteries are ligated, and this feature makes for more thorough work. Most extensive work may be done under local anesthetic without any pain whatever. To cite an extreme example of what can be done: I have recently removed a large osteoma from the frontal sinus and ethmoid regions under a local anesthetic, the operation requiring an incision from the outer end of one brow across to the end of the other. The choice of local anesthesia is more than a matter of opinion or convenience. It aids our technique and avoids dangers.

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F. H. Brandt, M. D. (1052 West Sixth Street, Los Angeles)—Doctor Friesen's results are very satisfactory. In the majority of cases, however, we can manage very well by an intranasal procedure. I am referring to the operation by Halle, who has repeatedly shown that if we bear in mind the anatomy of the nose and operate accordingly we can secure satisfactory results.

Very often we have an extension of the ethmoid cells into and in front of the agger nasi, and by chiseling away the agger we can look right into the frontal sinus and can with ease curette any polypoid tissue that may be present, and thus have a large outlet for drainage.

In ethmoid operations it is well to bear in mind the location of the anterior cells, the presence of which often results in failure in ethmoid work. This frontal sinus operation is best done under local anesthesia.

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Frank A. Burton, M. D. (404 Watts Building, San Diego)—Doctor Friesen has presented his subject in a comprehensive manner.

It has been my experience that the most of my frontal sinus cases needing surgical interference respond satisfactorily to intranasal procedures. From time to time, however, I have a frontal condition which demands external surgery. In such a case I do the Lynch or some modification of the Killian operation.

Doctor Friesen recommends thorough knowledge of the anatomy involved. I believe it is wise to review carefully the anatomy concerned immediately preceding the operation. I agree with Doctor Friesen's conclusions as to the indication for the external frontal surgery. As to conservatism there are times when it is more conservative to do the external frontal than to attempt to correct the condition intranasally.

I also favor thorough use of the x-ray. I prefer a complete x-ray sinus study. In this way one often avoids overlooking additional sinus infection, as well as determining the size, shape and position of involved frontals. Whenever feasible I prefer to do the work under local anesthesia.

Doctor Friesen referred to the Killian operation. Some years ago I had the privilege of working in the clinics of Doctor Killian and am convinced that we owe much to his effort and skill for what we know of frontal sinus surgery. While at the clinic, I saw many of the results that Doctor Killian had obtained, and

he told me of a "change of heart" in his frontal sinus work—he was becoming less radical. I have never done an unmodified Killian, and never expect to do one, but I would not fail to give Doctor Killian much credit for his contribution to surgery of the frontal sinus.

Max Halle's extranasal frontal rather appeals to me. I have seen him do several, and have done one or two under his direction, and still use a modification of his technique in most of my chronic frontals. Free drainage and ventilation of the frontal sinus is the objective, but different surgeons have different successful ways of obtaining this objective.

Doctor Friesen is to be congratulated upon his judgment in the selection of the Lothrop technique in these three cases. Results are convincing. To my mind the last of the three especially emphasizes the type of case calling for the Lothrop operation.

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Doctor Friesen (closing)—I agree with Doctor Sewall that local anesthesia supplemented with scopolamin and morphin should be used whenever feasible. It is the anesthetic of choice in all nasal and sinus surgery because it facilitates better technique.

I wish to express my appreciation to the gentlemen who have so kindly discussed my paper.

SYPHILIS—ITS NON-SPECIFIC TREATMENT*

By Merlin T.-R. Maynard, M. D.
San Jose

Discussion *by Harry E. Alderson, M. D., San Francisco; Victor G. Vecki, M. D., San Francisco; Merrill W. Hollingsworth, M. D., Santa Ana.*

FEELING secure in the possession of arsphenamin, bismuth, and the newer associated antisyphilitics, it is unfortunate that we forget that this age-old disease was once successfully treated in many instances by largely non-specific methods. These non-specific methods, old and new, should be kept in mind when treatment with the so-called specific therapeutic agents seems to meet with failure. It may be that we should name the non-specific measures as "paraspecific," for they should be used along with the directly treponemicidal treatment.

SPECIFIC THERAPY NOT ALL-SUFFICIENT

I am speaking now in this sense with no idea of replacement of the specific bulwark of our armamentarium, but more to bring to the mind of the general practitioner of medicine that he should not be contented solely with specific therapy. Such a practitioner soon finds his first Wassermann-fast case and, after much treatment and a series of discouraging Wassermann reports, has no other method of attack and is finally deserted by a patient from whom faith in medical help has fled. I do not here speak of those patients who become permanently negative after one or two courses of the specifics, but of those hopeless, prolonged, recurrent cases, with or without cerebral or spinal involvement, who resist course after course of efficient therapy until both the patient and the doctor are equally discouraged. Too much contact with the course system of treatment blinds the physician to individualization, and too much individualization leads to the neglect of the specific "edge" of our therapy.

The treatment in the absence of definite contraindication must always be specific, but the individual's reactions are the non-specific problem. We also have little need of such aids in the primary and secondary stages of the disease, for the spirochetes are largely available through their intimate contact with the circulation. In these stages the massive infiltrations are not present, and it is only after the mobilization of the cellular elements with the co-existing reduction of the caliber of the blood vessels, that iodids and fever and other infiltration-lytic agents must be used in order that our poisons may reach the spirochetes.

TREATMENT IN RESISTANT CASES

In the well-established resistant patient we may first use the non-specific properties of the specifics. In the first place, change the method of attack. Give the arsphenamin intramuscularly, preferably in the form of sulpharsphenamin, this choice being made to take advantage of the resultant tissue irritation which induces a generalized leukocytosis. Bismuth can be given in the same site because of the better absorption due to the local hyperemia. We can have the patient use his mercury in the form of rubs, but should also have him employ a masseur to give massage to the whole body for a similar leukocyte and circulatory stimulation. In the rest period he should receive an adapted form of the following measures, which aim not at a poisoning of the spirochete in the tissues by lethal doses of arsenic, but toward the destruction, or the control of this invading organism by the natural defenses of the body. Such defenses are heat (called fever), the action of the phagocytes, and the antibodies of the tissue fluids.

Many of the older and a few of the present syphilologists would condemn the giving of any treatment of a specific nature before the Wassermann reaction had become positive, and in pre-Wassermann days, before the secondary symptoms had developed. They support this stand by the assertion that it is not until this time that the antibodies have developed and the natural defenses of the body are operating, and if specific therapy be given before this time the immune phenomena are prevented and the infection becomes more deeply seated in the organism.

FEBRILE REACTION TREATMENT

The other methods that can be used are the stimulation of a febrile reaction by the introduction into the body of a foreign protein, as originally suggested by Wagner von Jauregg, and in which tuberculin, typhoid vaccine, gonorrheal vaccine, or other febrile stimulants are injected to produce high temperatures in the body. The same author also suggested the inoculation of the patient with malaria, following which he be allowed to

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* From the Skin Clinic of Dr. H. E. Alderson, Stanford University Medical School, San Francisco.

* Read before the Dermatology and Syphilology Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

have twelve or more chills before the disease is stopped with quinin. This method is now in general use with patients who have no contraindications, such being myocarditis or other severe organic disease, and sensitization to quinin. Fever can also be produced by the external application of heat, the best controlled method being the use of the prolonged hot bath.

Shamberg and Rule have recently demonstrated the possibilities of this method in experiments on rabbits. A definite strain of spirochete was subjected to heat on the water bath before inoculation into the rabbit's testicle. Infection did not take place even though the organisms were still motile. The organisms in question were kept at a temperature of 104 degrees for twenty minutes, and this repeated on a number of days. This temperature is, of course, often found in malaria. These same authors have other experiments in progress in which they are subjecting patients to hot baths to produce temperatures up to 102 degrees F. and suggest that it may be found that a hot bath can become a measure in prophylaxis as well as treatment. In rabbits, virulent strains failed to infect if a bath to produce a temperature rise of 104 F. in the animal was given three to four days after inoculation.

TONIC THERAPY

Leukocytes may be increased by the intramuscular injection of turpentine in oil, or the use of milk in a similar way. These injections should be given on the same day with salvarsan; or six to ten injections should be given in the rest period or immediately preceding specific therapy.

The use of rest, fresh air, good food, and the general practices of good hygiene are important. General tonics are advisable, the patient often doing well on a cod-liver oil mixture or a dietary stimulant such as the old elixir of iron, quinin and strychnin. The use of the cacodylates is subject to question and, if used at all, should be given intramuscularly. In such a method of administration one gains a leukocyte producing irritation and avoids the lytic action on the red blood cells that occurs in the intravenous method. A further advantage of this method is that the spirochete is not exposed to frequent non-lethal doses of arsenic, and the same danger of the production of arsenic-fast strains is not present.

IN CONCLUSION

In closing I would say that we should not forget that the patient has a resistance mechanism of his own to be considered, and we must take advantage of it if the patient is to receive full justice in the treatment of his syphilis. We see this commonly in our clinical work and at the Stanford University Medical School. We have learned that patients with bone lesions, recurrent eruptions, persistent chancres and other bugbears of the syphilologist who return over and over for specific therapy without appreciable change in their condition are those that demonstrate to us the need of adjuncts of a non-specific nature if we are to hope for appreciable improvement in them; and we believe that, although not all such patients respond favorably, the results obtained thoroughly justify the further use of paraspecific measures.

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DISCUSSION

HARRY E. ALDERSON, M. D. (490 Post Street, San Francisco)—Doctor Maynard has discussed in an interesting manner a very important phase of the treatment of syphilis. All who have had much experience with this disease appreciate fully the importance of auxiliary non-specific treatment designed to improve the patient's resistance and aid in the production of antibodies. This auxiliary treatment includes the use of physiotherapy as well as various so-called tonic medicines. Too often only routine injections of the arsphenamin, bismuth and mercury are used and no attention paid to underlying unfavorable conditions delaying return to good health. The eradication of a streptococcus focus is apt to be followed by more definite results from the antisyphilitic therapy. We have seen so-called "Wassermann-fast" cases change very definitely for the better after surgical removal of foci of infection. Of course in such cases the question always arises whether or not the operation brought about conditions analogous to what follows protein "shock therapy." Nevertheless it is well worth while to bear this matter in mind in the treatment of persistent Wassermann cases. Naturally we always suspect the presence of some hidden spirochetal focus, but in spite of very careful cardiovascular and cerebrospinal investigations and other examinations, we have to make diagnoses of "latent" or "asymptomatic" syphilis only too often.

It is in these resistant cases that various "non-specific" remedies offer some hope of stimulating improvement. For years at the Stanford Skin and Syphilis Clinic we have been teaching our students that the treatment of syphilitics *must be individualized.* In the handling of these asymptomatic cases is this particularly true.

VICTOR G. VECKI, M. D. (516 Sutter Street, San Francisco)—Any syphilologist of any experience will readily subscribe to every word of Doctor Maynard's timely and able paper.

It contains irrefutable truths that bear repetition and which can never be sufficiently emphasized.

In the last century Sigmund, Fournier and others repeatedly stated that, while a hygienic mode of living is good for everybody, it is imperative for anyone afflicted with syphilis. We are still unable to state with absolute security that any given case of syphilis is really cured, but we have in the Wassermann reaction and its modifications, mainly, however, in the Verne reaction, valuable aids in determining what should be done in every individual case of syphilis.

Physiotherapy in its various forms, the various foreign proteins, even Zittmann's decoction, may be of help, and it can never be emphasized enough that iodids must never be forgotten.

Obviously it must not be overlooked that a person afflicted with syphilis may also suffer from some other ailment.

MERRILL W. HOLLINGSWORTH, M. D. (409 First National Bank Building, Santa Ana)—Doctor Maynard has opportunely brought to mind a very important but frequently neglected side of syphilotherapy. I have used daily hot baths on three patients, attaining a mouth temperature of 104 degrees F. in two patients and 106 degrees F. in one patient. The duration of the baths was twenty minutes, and they were continued for eleven days in each case. No helpful effect on the course of the disease was observed. Joseph

Schumacher of Berlin attributes the benefit derived from foreign protein injections not to the heat produced, but to the proliferation of lipoproteolytic enzymes; and he further states that a lipoid-albumin mixture must be used as an antigen, since his experiments show that injection of a pure protein to be devoid of beneficial action.

Doctor Maynard mentions injecting proteins and the arsphenamins the same days. Many prefer to inject the proteins on days in between the arsphenamin injections. While at Vienna I was entirely won over to malaria therapy as there administered. They are using it as an experiment in all stages of syphilis, but the fever has not the lethal action on the spirochetes as suggested by Shamberg's work. Moist lesions still teem with spirochetes at the end of a course of twelve febrile paroxysms. Injections of bacterial proteins are followed by more severe reactions than animal proteins. I have used typhoid vaccine intravenously with good result.

THE LURE OF MEDICAL HISTORY

BOERHAAVE

By Jean Oliver, M.D.
San Francisco

TO them it was no temporary armistice—no breathing space between the heats of battle. Victory seemed complete and the way open to any heights that they, the supporters of the New Knowledge, might care to ascend. The old captains had indeed fallen—Paracelsus, Vesalius—but the inspiration of their leadership remained—to follow the courses which they had laid out could lead to only achievement.

Perhaps it was that the victory appeared too complete—nothing remained apparently of the Hippocratic-Galenical School but an historical memory, and as they stood on the threshold of the 17th century, it seemed that they at last had reached a resting place where they might count up, distribute and enjoy the fruits of their predecessors' efforts.

In this attitude they were not alone. They saw the vast "matériel" which the world had gained since the re-birth of knowledge worked and moulded into the edifice of Philosophy by Locke and Spinoza. How can we, wise only in the wisdom of their failure, judge them if they too wished to see Medicine a completed and organized member of the establishment of science? For man is a feeble creature, slow to learn, handicapped as he is over the rest of God's creatures by the fatal gift of reason, which can lead him from the straight and narrow way of experiment into the devious ways of ratiocination. The taste of the fleshpots of medieval dialectic still filled their mouths and they sighed again for the comforting logic of a summa—a unity of knowledge, complete in and of itself, all-embracing and final.

And so appeared Hermann Boerhaave. It would be difficult to imagine one more suited to the task. The son of an erudite minister, he received the customary training in the classics including theology. The decision to enter medicine rather than the ministry was as much the result of his acquirement of a reputation as a follower of the free-thinker Spinoza which barred the latter course to him than of actual choice. But once on the path

his progress was rapid, Professor of Medicine, then Rector of the University of Leyden, finally filling four chairs at once, those of Theoretical Medicine, Practical Medicine, Botany, and Chemistry. Pupils flocked from all Europe and even Asia to sit at his clinics. And here, to give proper credit, was an innovation which we owe largely to him. Leyden became the center of medicine, not only for those who would learn but also for those who would be healed. Dukes and princes waited for his consultations; even Peter the Great on his journey through Europe interrupted his itinerary to spend an evening with the Prince of Clinicians. For such he was as no one before or since has ever been.

His manner with patients must have been remarkable indeed. An English nobleman gave him a complete country estate for the advice that he take some exercise—not given of course in such words, but in a complicated description of the proper method of rowing that would be beneficial to this particular patient, elaborately interlarded with classical erudition and theory. His numerous letters to the ailing great ones that consulted him for their troubles are remarkably devoid of any positive advice in the line of treatment, but full of long-winded régimes that nevertheless seemed impressive to the times. They have been preserved for us, along with almost every casual remark of the Great Physician by Van Swieten, whose stenographic gatherings are such a marvel of completeness as would have made a Boswell jealous.

Not only was his local fame as a clinician tremendous, but also his renown as a scientist. His "orations," which are numerous, are filled with his desire to combine medicine with science. He is credited with the introduction of the thermometer into clinical use. He praises experimentation as the source of all knowledge and yet in all his career we have a record of only one use of the method. He observed that a dog and cat survived the heat of an oven in which he placed them longer than did a sparrow! But who would find time for grubbing in Nature's vitals when Kings waited to be healed, students to be inspired, "Orations" and "Institutes" to be written—all pursuits properly recompensed by honors, adulation and, not to be

despised, the fortune of two million guilders which he left to his daughter.

It is a strange trick that time in the ironic manner has played on this man's rôle in medical history. For his worshipers whose eulogies became almost incoherent in the volubility of their adulation, give in fact a very accurate valuation of his place in medicine. But how different a level from the peak to which they would have elevated their idol. The "Dutch Hippocrates"—they could conceive of no greater compliment. Yes, he was a reversion of almost two thousand years! Fortunately the germ that others had planted survived the drought of his arid eloquence. Medicine halted, but took the pace again, even with his own pupil, Haller.

And glance at the "Commentaries," compiled by the sedulous Van Swieten. Here, indeed, is a fitting monument to the Master—summing up as they do in eighteen volumes the amazing fact that there was not one single addition to human knowledge made by this semi-divine oracle.

The portrait is from his "Collected Works." The benignity of success and authority beams upon us.

Stanford Univ. Medical School.

CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

MYELOMA*

By KENNETH S. DAVIS, M. D.
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MYELOMA is a specific malignant tumor of the bone marrow, characterized chiefly by multiple foci of origin, a uniform and specific structure composed of plasma cells or their derivatives, Bence-Jones protinuria and a fatal termination. This is the orthodox description of the disease given by most pathologists, but it is subject to extensive modifications, as will be seen in the presentation of one of my cases.

In typical cases of multiple myeloma the x-ray findings are suggestive but not positive. The flat bones are more commonly affected, the skull, ribs, and pelvis, being the sites of predilection. However, in cases with extensive involvement practically all the bones in the body may show changes. The lesions are multiple, the bones showing numerous, fairly sharply circumscribed areas of destruction of varying size, but small as a rule. In the skull especially the findings are spectacular, for here we see numerous punched-out areas scattered through out the calvarium. Unfortunately certain types of carcinoma (hypernephroma, etc.), can give relatively the same findings.

Fig. 1—Case 1. The anteroposterior roentgenogram of the left shoulder showing multiple areas of fairly sharply circumscribed bone destruction and a pathological fracture of the shaft of the humerus.

Bence-Jones proteinuria is a valuable aid in the differentiation of myeloma, but even this test is not infallible, as Webster and others state that Bence-Jones bodies have been noted in sarcoma and metastasis to bone. Pathological fractures are common, occasionally being the reason for the discovery of the malignancy. There is rarely any expansion of the bone cortex or invasion of surrounding soft tissues. The symptomatology and pathology of this affection are so well known that their discussion here has been purposely eliminated.

Fig. 2—Case 1. The lateral roentgenogram of the skull showing multiple, circular-shaped, sharply circumscribed areas of bone absorption. These areas vary in size, but tend to be small.

CASE REPORTS

CASE 1—A woman 51 years of age was admitted to the hospital on January 20, 1927, complaining of a painful left shoulder. Three months prior to admission she had wrenched her left arm, and the left shoulder had pained her since that time. She also complained of pain in the lumbar spine, especially when bending or getting up and down. This "backache" was of ten years' duration, but had only been severe the past seven months.

There was a moderate weight loss (about twenty pounds) due partially to restricted diet. No other symptoms. Physical examination was essentially negative.

The roentgenogram of the left shoulder showed multiple small areas of bone absorption in the head and shaft of the humerus with a pathological fracture in the shaft about six inches below upper articular surface. Similar areas of bone absorption were noted in the clavicle, scapula and ribs included in the roentgenogram. (See Fig. 1.) Because of these findings, roentgenograms of other bones were made, similar changes being noted in the pelvis, ribs, femurs, and skull. (See Fig. 2.) Roentgenograms of the lumbar spine showed an absorption of the transverse process

* From the X-ray Laboratory, St. Vincent's Hospital, Los Angeles.

of the third lumbar, left side, and a marked decalcification of the body of the fourth lumbar which was somewhat flattened when compared with the other vertebrae. There was a strongly positive Bence-Jones proteinuria; this, together with our suggestive x-ray findings, led us to make a diagnosis of multiple myeloma.

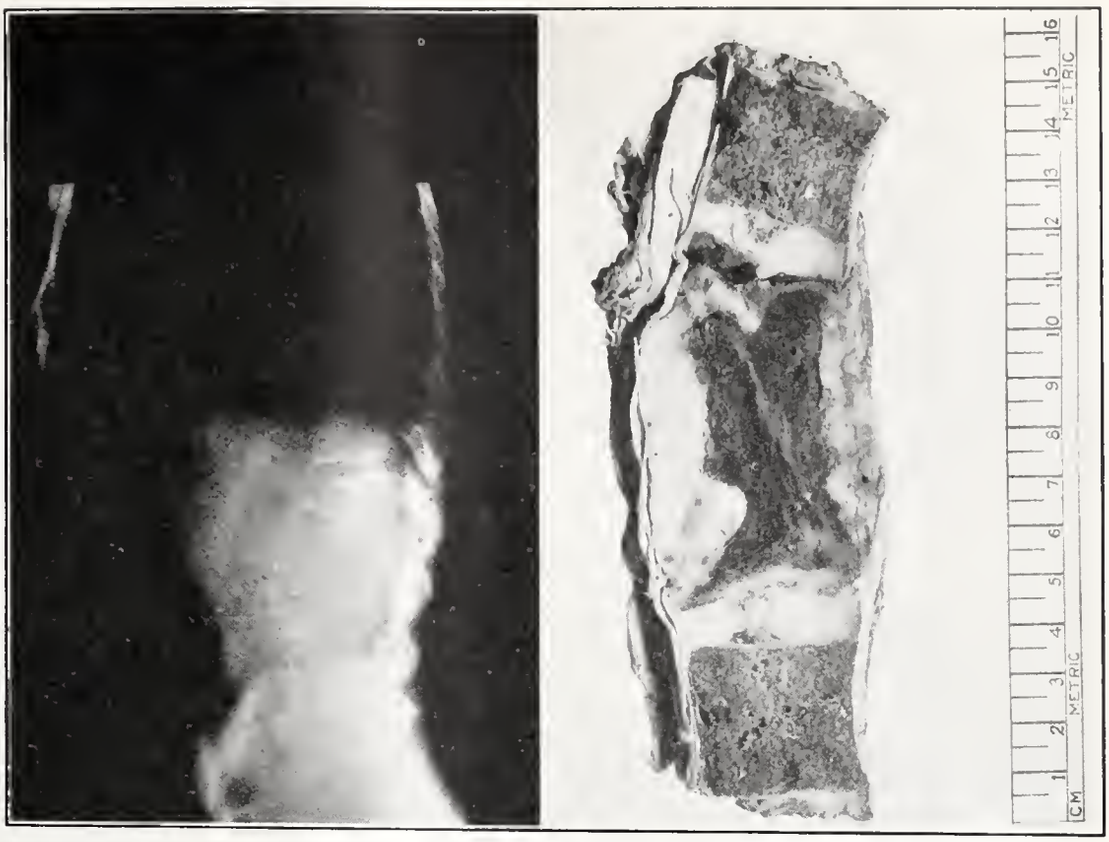

Fig. 3—Case 2. The lateral roentgenogram of the lumbar spine. Shows the absorption of the bone substance without marked flattening of the bodies or destruction of the intervertebral cartilage. Compare with Fig. 4.

Fig. 4—Case 2. Photograph of the vertical section through the lumbar spine at the site of involvement. Compare with Fig. 3.

The patient died April 3, 1927, less than three months after her roentgen examination had been made. The ten-year history of pain in the back probably had no bearing on present illness, although there are cases of myeloma on record in which the patient has lived three or more years. The beginning of the lesion more probably dates back to the onset of the severe stabbing pains in her back when bending or attempting to get out of a chair. When she was seen by us her general health was good and she was able to attend to her duties as a housewife. The pathological fracture probably accounts for the painful shoulder and, incidentally, was the means by which the malignant bone condition was discovered. No autopsy was done as patient lived out of the city.

Case 2—Patient, a male, 62 years of age, was referred to the x-ray laboratory for roentgenograms of the lumbar spine, December 1, 1926. He complained of pain in the lower part of the back, more marked on the right side. The pain was dull, continuous and aggravated by any movement. Patient's sleep was disturbed by muscular cramps of marked severity. He was unable to sit or stand in an upright position for any length of time, as this increased the severity of the pain. There were no other symptoms, and his general health was fairly good. Up to the time of onset of symptoms patient had always been very active for a man of his age, playing tournament tennis as well as golf.

ROENTGENOGRAPHIC FINDINGS

The lateral view of the lumbar spine showed an absorption of the lower half of the body of the first and an almost complete disappearance of the body of the second lumbar. The body of the third was moderately flattened and almost decalcified except for a thin shell of bone around the periphery. So far as could be determined, the intervertebral spaces were intact where visible and the bodies of the vertebrae, while destroyed, were not markedly flattened. (See Fig. 3.) In the anteroposterior view there was noted a bilateral soft tissue shadow extending along the sides of the vertebrae in the region of the involvement. This shadow was not dense enough to suggest abscess. There was an absorption of the transverse process of the second lumbar, right side, and a practical disappearance of the bodies of the first, second and third vertebrae, corresponding to the findings noted in the lateral view. Roentgenograms of other bones were negative for demonstrable pathology.

DISCUSSION OF THE ROENTGENOGRAPHIC FINDINGS

Clinically the case had been diagnosed as tuberculosis of the spine. However, the intact intervertebral space and the fact that the bony substance of the bodies of the vertebrae had been absorbed without marked flattening led me to make a diagnosis of bone tumor rather than inflammatory lesion.

Osteoclastic metastases as a general rule produce a mottled rarefaction of the bone which is quite characteristic. Multiple vertebrae are involved and other parts of the skeleton show similar irregular areas of bone absorption. If the process is extensive in a vertebra I have usually found that there is a more marked compression of the body than was observed in this case. The fact that more than one vertebra was involved was against a benign tumor so that the final x-ray

diagnosis was primary malignant bone tumor involving the lumbar vertebrae.

Sarcoma and myeloma were considered, but the absence of involvement of other bones and the fact that the urine failed to show Bence-Jones proteinuria, led us to give sarcoma first consideration. The only other lesion which could possibly give a similar roentgenographic appearance was a spinal cord tumor with erosion of the bodies of the vertebrae. As a rule in these cases the dorsal arches and laminae show the most extensive absorption. A course of x-ray treatments was recommended to which the patient responded very well for several weeks. Pain still continued, but was not so severe. He then developed a cord bladder, failed rapidly and died March 23, 1927.

AUTOPSY FINDINGS

Lungs, heart and abdominal viscera were negative for demonstrable gross lesion. In the lumbar region there was a fusiform enlargement of the vertebral column. This was found to be due to a new growth involving the bodies of the first, second and third lumbar vertebrae. The growth projected laterally about 2 centimeters beyond the normal limits of bone, pushing the muscles in front of it. It also bulged posteriorly, but had not penetrated the spinal canal. Longitudinal section of the vertebrae showed a rather soft red center and a gray firmer periphery. The intervertebral discs were of normal thickness. (See Fig. 4.)

No involvement of any other bones was found. On microscopic examination the tumor was made up of polyhedral plasma cells, the final diagnosis being myeloma of the lumbar vertebrae.

SUMMARY

Both cases had an involvement of the lumbar spine; in the first there was a typical generalized involvement of the flat bones, vertebrae, and the left humerus. In the second the lesion was apparently limited to three of the lumbar vertebrae. These cases illustrate the wide variance that can occur in lesions of a similar histological structure. Myeloma with only a single lesion is not commonly encountered.

St. Vincent's Hospital.

STREPTOTHRIX MENINGITIS

CASE REPORT

By Bert S. Thomas, M. D.
Sacramento

MY reason for reporting this case is twofold: first, because of rarity, and second, because the offending organism, which eventually proved to be a *Streptothrix*, may cause others the same anxiety that it caused me before its identity could be established.

At 4:30 a. m. on September 8, 1927, I was called to see T. S., a ten months old Japanese baby. The history was that of a "cross" baby on September 7, a rise in temperature during the evening, a slight convulsion at midnight, followed by a severe shake at 4 a. m. My examination revealed a well-nourished male baby, who was still spastic, and whose appearance indicated that any external disturbance would throw him into another convulsion. Rectal temperature was 105.6. Beside slightly exaggerated reflexes (with no inequalities), the only positive finding was the bulged and reddened gums over the two upper central incisors and the recent breaking through of the two lower central incisors.

The baby was sent into the Mater Misericordiae Hospital where another short convulsion occurred, followed by the vomiting of some clear green-tinged fluid. After a colonic flushing, ice cap, tepid sponges, chloral by bowel and phenacetin by mouth, the baby became playful and apparently normal by 10 a. m. The rectal temperature was then 99.4. The white blood count was 39,300 with 80 per cent polymorphonuclears. This, with a rise in the rectal temperature to 103 by noon, made me do a spinal puncture. This yielded a cloudy white fluid under markedly increased pressure. The cell count was 3840 per cu. mm. with 89 per cent of polymorphonuclears. A Gram stain on the fluid showed many ***Gram-negative*** bacilli. These organisms were not constant as to size. Some were small enough to resemble ***Bacilli influenzae*** while others were almost as large as the Hay bacillus. The fluid was planted on all media at the command of the hospital laboratory. This included lactose-agar, meat-infusion-broth, blood agar, bile, Loeffler's serum, Hiss' serum medium, lactose broth, maltose broth, dextrose broth, inulin—plus anaërobic control. Twenty-four hours showed no growth.

Adding to the other therapeutic measures, hexamethylenamin was given, fluids were administered by hypodermoclysis, and repeated punctures were done. A gradual down-hill course terminated in the death of the baby on the ninth day.

The leukocyte count of the fluid varied from 790 to 4370 per cu. mm., and the polymorphonuclears from 79 to 98 per cent. All fluid withdrawn was carefully studied. Repeatedly, and in great numbers, these ***Gram-negative*** bacilli were present, always varying from the short and small to the large and long forms. On the sixth day a sparse, cloudy culture appeared on blood agar; these stained and appeared (long and short) as those in the original fluid. At this time an appearance of slight branching forms in the original fluid suggested the question of a streptothrix, but the constant sure Gram-negative stain let this stand only as a possibility.

Finally, on the eighth day of the disease a five-day culture in a flask containing a generous amount of dextrose-meat infusion broth from the hospital laboratory showed long branching forms, some Gram-negative, and some Gram-positive. In several days, subcultures showed the typical Gram-positive streptothrix.

There are several questions for thought and consideration in connection with this patient:

First: The origin of the meningitis. Careful smears from the oral and nasal cavities gave no clew, though the probable entrance was through the cribriform plate of the ethmoid.

Second: The explanation of the morphology and staining qualities of the organism as seen in the withdrawn fluid. This probably may only be explained by its growth outside of its usual habitat.

Third: There remains the question of the possible therapeutic value of iodids if the organism had been identified earlier.

1027 Tenth Street.

The American Legion Believes in Home Care—Of the 523 children in care of the child-welfare division of the American Legion at the end of October, 391 were in the mothers' homes, 39 with relatives, 45 in foster homes, and only 48 in legion billets, local institutions, or hospitals. During October the per capita cost of providing for children in their own homes was $10.75; in local institutions, $24.48; and in legion billets, $70.—United States Department of Labor.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

THE TREATMENT OF COMPOUND FRACTURES

Leo Eloesser, San Francisco—It is surprising and disheartening to see how little we have learned from the lessons of the war. Of the few valuable facts that were gleaned from this great epidemic of injuries the immediate and aggressive treatment of contaminated wounds by debridement is the most valuable. Each of the combating powers learned by bitter experience the loss of life and limb that resulted from a "Let nature take its course" method of treating dirt-laden wounds and the incalculable saving that followed introduction of primary early debridements. This lesson, however, does not seem to have percolated into civil practice. Most compound fractures, in spite of frequent warnings, seem to be treated with compresses and the insufficient method of "allowing the swelling to subside," in other words, of standing by and watching the contamination develop into ineradicable osteomyelitis and other severe local and systemic infections.

The fate of a compound fracture depends utterly upon the first man who treats it; compound fractures call for immediate skilled attention—they are emergencies par excellence. The wound should be covered with a small bit of sterile gauze and the aseptic seal, the blood-clot that has been poured out over it allowed to remain. The first blood-clot is the only aseptic dressing ever applied to a wound; all later ones are contaminated by bacteria. With the small gauze sponge held firmly over the wound the limb should be shaved away from the wound edges with a dry razor. The skin should be cleansed with lime and soda paste and this washed off with a sponge moistened, not dripping, first with water and then with alcohol. When all the rest of the limb is thoroughly cleaned a tourniquet should be applied, the wound should be exposed and the edges, as well as all macroscopically dirty tissues, cut away with a sharp knife. The instruments should be changed frequently.

The ease with which fractures are reduced in the first few hours after injury is astonishing. If the bone is broken obliquely and the ends slip, they should be wired together or held by some internal fixation apparatus; the wound should be left wide open and irrigated with Dakin's solution every hour. If a debridement is apparently successful in leaving a clean wound one or two sutures may be passed through it and tied loosely; if the cleanliness is doubtful it is best to leave the wound wide open.

There is one class of compound fractures which are usually clean and do not need debridement—those which are compounded from the inside out, *i. e.*, when the aseptic bone pierces the skin; no foreign bodies are ground into the laceration.

After reduction has been accomplished the limb should be immovably fixed in an apparatus that will allow of easy inspection, a Thomas splint with traction or a plaster of Paris splint moulded directly without padding to one or two sides of the limb, leaving part of its circumference free.

If debridement is done promptly and skillfully and the fracture reduced immediately, much prolonged disability, stiffness of joints and future intractable suppuration will be avoided.

* * *

Edmund Butler, San Francisco—During my four years as a surgeon and eight years as chief surgeon of the San Francisco Emergency hospitals, a great number of compound fractures have come under my supervision and I have formed some very definite views upon the subject of treatment.

A simple classification of compound fractures is necessary for a logical discussion of treatment, and inasmuch as treatment of all long bones is fundamentally similar I shall select compound fractures of the bones of the leg:

1. Compound fracture with only a small perforation of the skin, no bone protruding at the time fracture is inspected.
2. Bone protruding through wound in skin.
3. Large wound in skin, extensive injury to soft parts, single fracture.
4. Large wound of skin, extensive injury to soft parts and comminuted fracture.

If the perforation of the skin is small and the fragment is not protruding the treatment carried out should be the same as in a closed fracture. Small glycerin and alcohol (equal parts) compress should be applied to the wound and changed daily. Prophylactic dose of tetanus-antitoxin, 1500 units, should be given, which is to be repeated if there is any evidence of infection. Soft parts should be carefully inspected and palpated daily for evidence of infection, particularly infection of the gas-forming organisms. If spreading infection is evidenced the wound is to be enlarged and free drainage instituted.

If the fragment protrudes through the skin and it is possible to remove all visible contamination, then thoroughly scrub protruding bone with tincture of iodin or 3 per cent mercurochrome solution and reduce without drainage. If unable to remove all visible contamination, it is best to enlarge the wound and to drain freely. Carrel-Dakin treatment of such a wound is ideal, and to date is the best treatment we have available.

The type splint used may be plaster, wire mesh, Thomas type, or any of the many patented cardboards or felt and glue types.

The desire in the application of plaster is to leave a large window so the wound and soft parts may be inspected frequently. The combination of the Thomas splint and the Carrel-Dakin treatment go together perfectly, but it is my advice that the doctor use the splint with which he is familiar and with which he can make the patient most comfortable. A splint that maintains apposition and the alignment of fragments, is comfortable to the patient, and permits of the inspection of the wound, is required.

When the skin and the soft parts are badly torn and infection of the wound is evident, such fracture should be treated with the Thomas splint and the entire wound flooded every two hours with Dakin solution. If the bone is exposed for a considerable distance, and the fracture is oblique, I frequently put a large bone plate on the most accessible portion of the bone and use Carrel-Dakin treatment. An extensive wound may require at least one dozen tubes. Small catheters make admirable Dakin tubes.

With large wounds and comminuted fractures it is imperative to use Dakin solution, because it is impossible to eliminate infection in soft parts, whose blood supply has been restricted. Injury and infection may mean a useless leg. If the wound is properly Dakinized I have never seen infection spread. Therefore it is imperative that all surgeons handling this type of fracture familiarize themselves with the Carrel-Dakin treatment of wounds and the use of the Thomas splint.

If the fracture is transverse only slight extension may be necessary. This extension may be made with Steinman pin through the os calcis or above the os calcis. If the fracture is oblique then sufficient extension must be maintained to keep the fracture properly reduced. If the Lane plate has been used then no traction is necessary; although I feel that a little extension makes the patient more comfortable even when it is not necessary to maintain reduction.

* * *

Fred J. Davis, Westwood—For practical purposes we classify compound fractures under two headings: (1) Those caused by the end, or ends, of the fractured bone protruding through the skin from within. (2) Those caused by some object from without penetrating the skin, soft tissues, and finally fracturing the bone.

Those fractures under the first heading are of course potentially infected, as the end of the bone must touch the contaminated skin and clothing; but practically whatever infection there may be usually takes care of itself if given a chance. Such fractures should be molested as little as possible, a simple dry dressing (sterile) placed over the wound, the fragments adjusted as accurately as possible with little manipulation, the member splinted, or put in fracture box, and continuous traction applied, dressing changed as required, and the patient kept quiet. Usually in a week or so the wound will be healed and the fracture may then be treated as a simple fracture, the fragments adjusted under an anesthetic if necessary, and the member put in a cast. The most important thing in the treatment of these fractures is the gentleness in the first handling that the already damaged tissues be not further damaged, thus giving them the best opportunity to care for any slight infection which might have been carried into the deep tissues. Probing and swabbing should be strictly avoided.

Occasionally these fractures do become infected; if so, free incision and drainage is the proper course to pursue, still maintaining traction and keeping the fragments in the best possible position. Further treatment of these infections of course depends upon the severity and type of infection, and will not be discussed here.

Compound fractures coming under our second heading, those compounded from without, call for more radical treatment. These should be widely opened, all foreign matter and damaged tissue removed, thoroughly irrigated with Dakin's, or other similar antiseptic, the wound left open for drainage and suitable dressings, and traction applied.

If no infection occurs, the wound heals rapidly and a good limb results. If infection develops, good drainage must be provided until the wound eventually heals, or until there are indications for further operation, such as the removal of dead bone, etc.

* * *

Charles C. Falk, Eureka—No matter where the fracture is located, the important points that have served me well are:

First: Cleansing thoroughly every involved part; for this a one-half per cent fairly hot liquor cresolis compound solution will remove fairly well grease and foreign materials; is non-irritating and a good antiseptic.

Second: Removing all destroyed tissue, eliminating necrosis.

Third: Establishing thorough drainage, preventing opportunity for formation of pockets. If destruction is great, rubber tubing is used; otherwise, twisted catgut or silkworm gut. It is not necessary to leave any of these drainage materials longer than ninety-six hours.

Fourth: Dressing. My experience with Dakin's solution has not been entirely satisfactory, due to difficulty in obtaining perfectly fresh, properly neutralized solution. If not fresh and properly neutralized, the antiseptic element is questionable, and the solution is often very irritating. Ochsner's solution, composed of one part 5 per cent carbolic acid, one part 95 per cent alcohol, and six parts saturated boric acid, has been used for the past fifteen years, saturating dressings sufficiently large to take up all drainage, then covering all parts of dressing with light rubber sheeting; this retains heat of affected parts, relieves pain and keeps dressings absolutely moist and hot. Never at any time has this dressing caused irritation or toxic absorption, and of all dressings has served me best. These dressings are changed first at the end

of seventy-two hours, then every twenty-four or forty-eight hours, according to drainage.

Fifth: Fixation, using any of many satisfactory types. Personally, in arm or leg fractures I prefer an ordinary pillow, which not only acts as a fixation splint, but is exceedingly comfortable. The pillow is tied around the dressings with ordinary bandage material, using from four to six parts; the more used the more efficient the splint.

Sixth: Extension, sufficient to prevent muscular contraction and bony overlapping. In ordinary cases extension longer than fourteen days is unnecessary; by that time tissues have adjusted themselves to conditions.

Remarks: Continue moist dressings as long as there is drainage; fixation as long as there is abnormal mobility. When wound has healed, a light plaster of Paris cast is applied and use of parts insisted upon. If there is bony overlapping, and it is certain that bony union will not be re-established, plating is preferred to bone sliding or transplanting. The success of plating lies entirely in the prevention of mutilation of the soft parts and in overhandling of bony structures. Make as large a cut as necessary straight down on top of bone through periosteum, then free the periosteum from bony structures without touching soft parts; then with proper bone instruments perfect apposition and fixation should be obtained. Close soft parts with through and through silkworm gut sutures, being careful not to tie stitches too tightly. Buried sutures have not been found satisfactory. Following above methods it has been found necessary to remove very few plates. In delayed union a light cast and rather free use of parts gives excellent results.

Local Patients Kept Out of Hospitals by Motoring Victims—The number of motor accidents has become so great as to constitute a special problem for hospitals. Mr. J. C. Buchanan, secretary of the British Hospitals Association, said in the press that the question of the effect of the growth of motoring on the finances of hospitals has been engaging the attention of the British Hospitals Association for the last few months. "Hospitals throughout the country are overcrowded with injured patients from other parts. In many cases patients are unable to secure beds in the hospitals which their district supports because they are full up with people from other places. We are considering the question of securing an amendment of the law to enable voluntary hospitals to include, in their expenses, statements of claims arising from motoring accidents."

Nomenclature of Drugs—A correspondent has sent us the following complaint. He read in an American article a strong recommendation of a drug called methenamin as a urinary antiseptic. Inquiries made by the dispensers of his hospital failed, however, at first to identify any drug of this name, and it was only after some trouble that our correspondent learned from America that methenamin was the title adopted by the tenth edition of the United States Pharmacopeia for hexamin. This is a very typical example of the confusion that is bound to arise if more than one official name exists in the same language for a single drug. We know that similar confusion is constantly arising in regard to many other common drugs which have different titles in this country and in the United States. In this particular instance the actual history of the nomenclature of the drug is as follows. The substance hexamethylen tetramin became known to the medical profession under the proprietary title of urotropin. It was included in the British Pharmacopeia, 1914, under the title hexamin, and in the United States Pharmacopeia IX, 1916, with the name hexamethylenamin. Although these titles were not identical, yet they were sufficiently alike to prevent confusion, but unfortunately in 1926 the name was changed to methenamin in the United States Pharmacopeia X. We understand that this change was made because it was felt to be desirable to shorten the name, and unfortunately proprietary rights were claimed in the United States of America over the name hexamin. Some similar reason will usually be found in most cases where a variegated official nomenclature for a single drug puzzles and annoys the practitioners of medicine. Such histories obviously indicate a very unsatisfactory state of affairs. Medical literature is international, and this is true in a special sense of all medical literature written in the same language. There is every advantage in having only one official name in the English language for any particular drug. One difficulty is that a large proportion of new drugs are introduced as proprietary articles, and it will usually be necessary for the medical profession to endure one change of name when such drugs are first introduced into the pharmacopeia. There is, however, no reason why more than one such change should be inflicted, and it is to be hoped that some international agreement will be obtained to insure that, when a name has once been introduced as an official pharmacopeial name in either the United States or this country, it shall be free from capture as a proprietary name, and shall be adopted as the official name in both countries. The value to the medical profession of official names for drugs that have been introduced under proprietary titles is that an official and nonproprietary name often reduces the price of a drug by throwing its manufacture open to competition, but if the official names do not succeed in establishing themselves in common use they fail to serve this purpose. Now the task of obtaining a satisfactory official name for any drug that has been established under a proprietary title is always likely to be difficult, because the most suitable and obvious names are just the ones which are most likely to be subject to proprietary right. Moreover, the proprietary name usually has a long start of the official name. If in addition to these unavoidable handicaps the official names differ in different countries, it must often happen that the official names will be ignored and the proprietary names retained in use.—Editorial in *Brit. M. J.* 2:1153, December 17, 1927.

Abnormal Prevalence of Meningitis in 1927—The United States Public Health Service reports that there was an abnormal prevalence of spinal meningitis for the year 1927 as compared with the preceding two years. Thirty-seven states and the District of Columbia, having an estimated population of more than 90,000,000, reported 2317 cases of meningococcus meningitis for the forty-nine weeks from January 2, 1927, to December 10, 1927; 1571 cases for the corresponding period of 1926, and 1226 cases for the forty-nine weeks in 1925.—*The Boston Medical and Surgical Journal.*

Coffee Is Regarded as Beneficial—Professor Ralph H. Cheney of the biology department of the New York University is quoted as saying that "Evidence derived from my study of the effect of coffee on animals and man indicates that the properly prepared beverage is highly advantageous with respect to over 90 per cent of normal individuals. . . . Caffein is a drug and its use can be abused, but acute injury, as far as the caffein content is concerned, would necessitate the consumption of over 150 cups, which is, of course, ridiculous." There must be recognized idiosyncrasies in the use of any article of diet.—*The Boston Medical and Surgical Journal.*

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EDITORIALS

THE CALIFORNIA BOARD OF MEDICAL EXAMINERS—WILL IT CEASE TO EXIST AFTER THE NEXT SESSION OF THE LEGISLATURE?

The next session of the California legislature will convene in January, 1929, which is less than twelve months distant. The election for state officers and legislators will be held in the Fall of this year 1928.

The fifty-seventh annual session of our state medical association, the California Medical Association, will convene in April, 1928, only two months away.

The above sequence of calendar events is summarized so that members of the California Medical Association may better visualize for themselves the time elements involved if certain important public health and medical legislative problems are to be properly considered.

For it is desirable that we should take up in ample time and in deliberative manner the consideration of those public health and medical measures which we may wish to espouse when later on our civic elections are held and our lawmakers meet; and to fully understand what we must do to accomplish the ends which at this time we may have in mind, and at what rate we must carry through our work.

* * *

It is not the purpose here to discuss the many public health matters which might be given consideration prior to the annual meeting of the California Medical Association, for most of such subjects would require more space than at this time could be allotted.

It is our present object, however, to call attention to one very important matter, concerning which the component county medical societies and their respective members may well give some thought and discussion, since it has to do in California with a proposed radical change in the method of licensure of graduates of schools of medicine, who in the future may desire to acquire the legal right to practice their profession in this state.

* * *

By this proposed somewhat radical change in our state medical law the present California Board of Medical Examiners, as we have it and have known it for the last twenty-five years or so, would cease to exist!

Its place would be assumed, or it might be more correct to say, its functions would be taken over by a proposed new department of the state government which would go under some such name as the Professional Standards Department of California, its director or chief having a place in the so-called Governor's cabinet.

Those members who do not understand this cabinet plan can acquaint themselves in regard thereto by perusing the editorial in the October, 1927 issue of this journal, page 528; wherein the changes already made and still to come are outlined.

* * *

This proposed new Professional Standards Department of California would take over the functions of some sixteen or so licensing boards now existing in the state, the work of licensure being carried out under the supervision of a chief, probably a layman, who through paid deputies would decide what would be proper questions to ask of those seeking licenses to practice their special businesses, arts or professions, among such applicant groups being the plumbers, the barbers, the engineers, the beauty specialists, the physicians and surgeons, and others. These paid deputies who would examine applicants for physicians' and surgeons' certificates would also decide on such matters as the evidences of preliminary and professional education which might be submitted, the value of the answers given in the written and oral examination tests, and so on. In fact everything now done by the present board of examiners, even including the first steps in the prosecution of illegal practitioners.

This vista as just briefly described, which the members of the California Medical Association and the component county societies of that organization are now called on to consider, must be acknowledged to be little less than startling!

* * *

In Illinois this plan was inaugurated some years ago, and the work of medical licensure in that state for several years was of such standard that the present California Board of Medical Exami-

ners, in common with other states in the Union, refuses to recognize any reciprocity with Illinois for certain of the years in question because of the low standards then obtaining. That is how the plan worked out in the great state of Illinois!

A side thought thereto is this: Would a future lay chief of the proposed California Professional Standards Department decide the above present board ruling to have been arbitrary or unjust? If so, then California would witness the influx of a goodly number of physicians who were licensed during the low standard régime years of Illinois, and no doubt a goodly number of these reciprocity applicants, after licensure here, would seek admission into the component county medical societies of the California Medical Association! Who could and who would say them, nay?

* * *

As stated in the California and Western Medicine editorial previously referred to, the plan of consolidation of the multitudinous bureaus and administrative agencies which existed in California in the past had and has much to commend it.

But the writer must submit his own opinion that the plan to include our California Board of Medical Examiners in such a Professional Standards Department may result in serious detriment to the public health and medical interests of the people of this state. And those interests are so vital a part of the rights of citizens that they should be paramount to economic reforms, which might be very applicable or desirable for boards of less grave or arduous responsibilities.

* * *

We have only to look back at the last two or three decades and to consider the many delicate and serious medico-legal problems that have come before the present California Board of Medical Examiners and its predecessors, to be convinced that such difficulties would probably be multiplied and magnified under a direction less altruistic and less skilled than that given by present and former colleagues on the examining boards; who in the name of the medical profession have performed so efficiently and so generously these very important public health services for the people of California.

* * *

Also, it is worth remembering that when the California Board of Medical Examiners would cease to exist as such, the Osteopathic and Chiropractic Boards, which came into existence several years ago through initiative vote of the people of California, would continue to function, with no loss of rights to the Professional Standards Department which the next legislature in all probability will be asked to bring into existence. In other words, those comparatively recent groups of practitioners are seemingly in a more independent and advantageous position than is our own group in the premises which will face us when the 1929 legislature convenes in January next. That is, unless we inaugurate measures to prevent such proposed action being taken.

* * *

The alternative procedures which the licensed physicians and surgeons of California and, more particularly, which the California Medical Association and its component county societies must consider may be said to be two:

First: To acquiesce in the elimination of the present Board of Medical Examiners, now composed of ten physicians and surgeons receiving pay so nominal that their services are practically a donation to the state, the place of such board being taken by a probable lay chief of a newly created Professional Standards Department and his salaried deputies; and

Second: The consideration of the desirability of having the California Medical Association sponsor an initiative which would keep the present board of medical examiners in existence; and which action would be requesting no greater rights from the citizens of California than those which they have already granted to osteopathic and chiropractic practitioners.

In this connection the question of also sponsoring an initiative for a Basic Science Board, such as was discussed on page 525 of the October, 1927 issue of this journal, would also come up for consideration.

* * *

We medical men and women certainly have the right to fight vigorously for all those measures which will maintain to the highest possible average the educational and professional standards of our own group of practitioners, in order that we may the better serve the public health interests of California, as well as those sick and injured citizens of the commonwealth who seek our professional care and aid. It is therefore proper that this proposed legislation be called to the attention of the more than 4400 members of the California Medical Association. A special committee has already made a report on the subject to the Council of the California Medical Association and the same may be printed in due time.

* * *

These preliminary comments are submitted in this issue so that members of component county societies, and especially the delegates and alternates thereof, may bring the matter to the attention of the officers and program committees of their respective county societies, in order that the questions at issue may be brought up and discussed in the March or April meetings of their local organizations.

If that is done the delegates who will represent the county societies at the next annual session of our association at Sacramento will be in position to act with decision on this important matter, which so vitally affects the interests not only of the medical profession, but of the lay citizens of California.

All members of county societies who believe this problem to be one of gravity are urged to take

steps to have an adequate discussion thereon take place at an early day in their respective county societies. The county society which fails to bring this matter to the attention of its members may be said to have failed somewhat as regards its obligations to organized medicine. The solution of the problem will be before the citizens of this state this Fall or the coming Spring, and the House of Delegates of the California Medical Association at the Sacramento meeting must determine what course of action shall be followed.

* * *

If we decide on an initiative and are successful in regard thereto our licensure troubles with the California legislature of 1929 and its successors will have come to an end. If, however, we procrastinate or vacillate, then when the next legislative session convenes in January, 1929, we will have a serious proposition to consider; and in all probability our colleagues who will secure licenses in the future will also ponder as to why we permitted certain things to come to pass. And if physicians and surgeons of poor training and qualifications are admitted through such a new board, even those of us who practice in California today may have reasons to reproach ourselves in the days to come; for reasons more than one.

SOME HISTORICAL FACTS CONCERNING THE CALIFORNIA MEDICAL ASSOCIATION—THE COMMITTEE ON HISTORY OF THE C. M. A.

The annual directory of members of the California Medical Association, which was recently sent to each of its more than 4400 members, contained a brief historical account of the Association.

One paragraph in that sketch should be of more than passing interest to us, since it vividly portrays the marvelous growth of California in the last half-century; and indicates how the manifold agricultural, manufacturing, economic and cultural developments of this empire domain on the shores of the Pacific, associated with the wonderful changes in transportation facilities, have been responsible for great changes in the geographical makeup of the California Medical Association.

* * *

The paragraph referred to made mention of the state society publication known as the *Annual Transactions,* and called attention to the fact printed in volume one, edition of 1873, that of the 195 members there listed, only seven were residents of southern California: four of these being from Santa Barbara County, two from San Diego County, and only one from Los Angeles County!

By contrast, the 1928 state directory of the California Medical Association shows that of the total membership in the society, some 2217 members are from the ten southern counties (including in that group the counties of San Diego, Riverside, San Bernardino, Imperial, Los Angeles, Santa Barbara, Ventura, Orange, San Luis Obispo, and Kern), the remaining 2194 members being from the forty-eight counties north of the Tehachapi.

This new distribution of state society membership is explained, of course, on the basis of the increasing population growth in southern California, due to the various factors already mentioned, plus the changes made in topographical environment by bringing water to what previously could be called little more than grazing, waste, or desert land areas.

* * *

From its founding up to the reorganization of the state medical association in 1901, when it was necessary to comply with the new regulation of the American Medical Association permitting the recognition by state associations of only one component medical society in any county, the membership rosters of the California Medical Association show that it was practically a northern California society; its counterpart or analogous organization in the south being the Southern California Medical Society, which came into existence in 1888.

On April 6, 1888, the proposal was put forward in the Los Angeles County Medical Association to organize a district medical society, and on June 8, 1888 the Southern California Medical Society came into existence, with forty-eight charter members distributed as follows in the then southern counties: Los Angeles, 37; San Diego, 6; San Bernardino, 4; and Kern, 1.

In that same year, of the 416 members in the state medical association, only forty-one were from the South, by counties being credited: Los Angeles, 23; San Diego, 11; Santa Barbara, 4; Orange, 2; Kern, 1.

The dental profession has had a somewhat similar experience, and in California still presents two large dental organizations, one for the region north, and the other for the district south of the Tehachapi.

* * *

The official register of physicians and surgeons in the state of California of date of January 31, 1885, as compiled by the Board of Medical Examiners of the Medical Society of the State of California, prints a copy of "An act to regulate the practice of medicine in the state of California," which became a law on April 3, 1876, and which was amended on April 1, 1878; those statutes making official recognition of the corporations known as "The Medical Society of the State of California," "The Eclectic Medical Society of the State of California," and "The California State Homeopathic Medical Society," and providing for the appointment of the state examining board by those organizations.

The official register of 1885 contains the following interesting items:

"The number of certificates issued by the Board of Examiners of the Medical Society of the State of California, to date (1885), is 1698; number issued by the Homeopathic Boards, 217; number

issued by the Eclectic Board, 294; total number issued by the several boards, 2209.

"Total number of legal practitioners in the state, 1663. The number of persons practicing medicine in this state without a license, 485. Total number practicing in this state, 2148. The estimated population of the state is 1,036,298. Proportion of population to each licentiate of this board reported in this state, 838 +."

* * *

The last directory issued by the present Board of Medical Examiners of the State of California, which appeared on March 3, 1927, shows that in California a total of 9193 physicians and surgeons are now on the active list of the state board. Of that number 7699 physicians and surgeons are residing within the confines of the state. The estimated population at this time exceeds 4,500,000.

These last figures make an interesting contrast to those just mentioned, and which were taken from the 1885 reports of the state examining board.

* * *

Forty years have come and gone since 1888, and in these four decades California has been the scene of a transformation that is almost staggering when the wonderful changes that have everywhere taken place are contemplated.

These notes are here made not only to call attention to facts such as above are briefly indicated, but particularly to remind all members who may know of documents or publications which could shed light on the earlier days of medicine in California to at least write to the central office of the Association in regard thereto.

The special committee on archives and history of the California Medical Association, of which Dr. Emmet Rixford of San Francisco is chairman, would then be in a position to avail itself of such data in the compilation of historical material which is now being gathered.

THE TUBERCULOSIS PROBLEM OF CALIFORNIA—AT PRESENT AND IN RETROSPECT

When the history of preventive medicine in America is written, the chapters devoted to the important part played by the antituberculosis agencies, of necessity will find a place in more than one chapter of such a chronicle.

For it must be remembered that after what might be called the sanitary engineering impetus given to modern preventive medicine, which came about through the publication of the reports on the conditions of wage-earners in England about the year 1850—and the later vastly broader insight concerning the causative agents of infectious diseases, as developed in 1870 to 1900 through Pasteur's researches and the new science of bacteriology—there came into consideration a third vital factor in public health progress, which might be termed the human or social service element; this new factor finding its special and greatest development in the efforts to overcome the unnecessary deaths caused by that ubiquitous disease, tuberculosis.

* * *

The immense progress made in the prevention of infectious diseases—through measures which were not only aimed at elimination of inciting germ causes but also at contributory social deficiency factors—and which progress has been such an outstanding phenomenon in all civilized countries during the last quarter of a century, has been particularly associated with the disease, tuberculosis. In addition the educational campaign on measures designed to aid in lessening the ravages caused by the great white plague were carried out in such comprehensive and thorough manner that lay citizens as well as medical men were educated and enlisted in large numbers to do their respective parts in the preventive work.

* * *

Twenty-five years or so ago California had morbidity and mortality statistics relating to tuberculosis that gave the state, and especially its southern section, a quite unenviable reputation throughout the East. Today, when the splendid progress in antituberculosis work which has been made in these recent years of concentrated effort is noted, it is gratifying to realize that through volunteer physician workers California early took up the serious consideration of that important public health problem, the Southern California Antituberculosis Society, founded by Dr. F. M. Pottenger, being about the seventh organization to come into existence in the United States.

* * *

It is interesting to look back at the efforts of those days and to note how the continued work in the efforts and for the measures then brought into existence have resulted in such splendid results for our state. At that time, before the advent of the American Red Cross Christmas seals, which today are the means of replenishing to large extent the treasuries of the local agencies dealing with tuberculosis, the writer devised two such stamps at the Yuletide season for the California association; stipulating also that in the circularization of those stamps in Los Angeles city and county, that one-half of the net proceeds should go to the state tuberculosis association so that its educational and propaganda work might be carried to other portions of California.

* * *

Through the continued agitation as to its purposes and in the publicity given to the clinics which it sponsored, what might be called the paper state tuberculosis organization secured an appropriation from the California legislature of 1911 which enabled the State Board of Health to cause a special investigation into the tuberculosis problem of California, to "ascertain the effects of localities, employments, conditions and circumstances upon the health of those developing the disease, and to determine the best means for its eradication. To this end a commission consisting

of an executive board of five members and an advisory board of fifty members was appointed by the State Board of Health to carry on this work."

* * *

The writer had the honor to be elected chairman of that commission, its report being printed by the California State Printing Office in 1914.

In essence that report laid "special stress upon the importance of the county and city governments taking up the tuberculosis problems as community rather than as purely state problems," and particularly recommended a Bureau of Tuberculosis as a new department of the State Board of Health; as well as a revolving state fund designed to encourage county boards of supervisors to provide better aid to the indigents suffering from tuberculosis who were admitted to county hospitals.

* * *

The state tuberculosis association from the very beginning worked hand in hand with this newly established bureau, and through all these following years has given whole-hearted support to private and local community as well as to state efforts aiming to lessen the incidence of tuberculosis among our citizens.

* * *

The charts which have been published by the California State Board of Health show that the tuberculosis death rate of 225 per 100,000 population in 1916 was reduced in twenty years to lower than 140 deaths per 200,000 population. In the period 1906 to 1921, a period of fifteen years, some 14,469 lives were saved through the better hygienic and therapeutic measures largely brought into being by the joint efforts of the California Tuberculosis Association and the Bureau of Tuberculosis of the California State Board of Health.

* * *

These facts and figures are given because all this is creditable to California citizenship and particularly to the small group of medical colleagues and their lay associates who in the last score of years have most generously given of themselves so that this good work might be adequately supervised and carried on.

The statement has been made from time to time that this comparatively small group of workers have had only a handful of persons at the annual meetings, but that fact does not detract but rather adds to the credit which should go to these colleagues. Their unselfish loyalty to the cause, their willingness to give intelligent and broad-visioned service to the continued development of this important work, have been important elements in accounting for the beneficent results which are now so much to the credit of California.

The influence of those leaders, many of whom have been identified with the work almost from the beginning, has been a large and a determining factor in giving boards of supervisors a proper orientation of this important public health problem; and explains in good part why and how those officials in many counties in our state passed the necessary laws for the erection of the many modern sanatoria which have taken the place of what might be justly called the black death rooms of the old tuberculosis wards which existed in some of our larger county hospitals only two or three decades ago.

* * *

Today the recommendations of the California State Commission made in 1914 have been copied by more than one state in the Union, because of their soundness and practical value. Those measures, with the passing of the succeeding years, have given evidence of merit far greater than even their sponsors imagined them to possess.

In the year 1928, California handles this important tuberculosis problem not on a state sanatorium basis, but as a community county problem, which is as it should be. As a result, some of the most up-to-date and efficient public sanatoria in America have been and are still being erected in California.

The annual governmental appropriations to these California institutions represent the interest money on what would be an endowment of more than thirty millions of dollars, a sum of money which would never have been raised had the agitation been confined to efforts to secure donations from private citizens.

These splendid results in the prevention of tuberculosis, which all these things represent in the public health work record of California, should give all citizens a feeling of pride; and we who are also physicians may feel especially so in the knowledge that from the beginning the leadership in this altruistic and humanitarian endeavor has been particularly associated with medical men, and the executive associates whom they chose as being well fitted to aid in carrying on the work in efficient manner.

Compensation for Child Workers, Illinois — On July 1, 1927, the new provisions of the Illinois Workmen's Compensation Act came into effect, under which illegally employed children who are injured in industrial accidents are now entitled to the benefits of the act and will also receive compensation amounting to one and a half times as much as they would have received if they had been legally employed. Before this legislation was passed illegally employed children had no rights under the compensation act but had to bring suit against their employers under the common law in case of injury. This remedy, however, was tried in comparatively few cases because of the cost, uncertainty, and delay of court procedure. It is expected that under the new law employers will observe more carefully the state child labor law and will demand adequate proof of age from their minor workers.—U. S. Department of Labor.

"Mothers' Aid" Granted by Institutions—Four institutions conducted under church auspices in North and South Carolina, finding that some children for whom institutional care was requested could be cared for in their own homes if the mothers had the necessary means to support them, are now giving "mothers' aid" in such cases. South Carolina is one of the six states which at present has no law granting aid to children in their own homes.—United States Department of Labor.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Industrial Medicine

Studies in Prevention of Toxic Hazards—Preventive medicine in industry has been given a definite impetus and the general interest in preventive methods has been heightened by the conclusion of a study of benzol poisoning conducted by the National Safety Council. Two significant points in this investigation are emphasized by Winslow[1]: (1) that this great organization representing industry has itself conducted the research and has now entered the field of industrial poisoning, which is allied to safety and accident prevention; (2) the use of thorough research methods in a quantitative rather than qualitative study. It is interesting also to note that since this investigation was made, there have been two others; the work of the United States Public Health Service on tetraethyl lead and the spray painting study by the Pennsylvania State Bureau of Labor and the National Safety Council. Incentive to further work along preventive lines is thus given by these excellent endeavors to circumvent industrial hazards.

Winslow has called attention to two classes of uses of benzol. First, there is the group of industries where the nature of the work demands a closed pipe line system, such as (1) the distillation of coal and coal tar in making benzol, (2) the blending of motor oils, and (3) the chemical industries, which embrace oil extraction, dye and dye intermediates, paints, varnishes, stains, and paint and varnish removers. The second group is represented by processes essentially characterized by the slow or rapid evaporation of benzol, such as in (a) the rubber industry, (b) in the manufacture of artificial leather, (c) in dry cleaning, (d) in sanitary can making, (e) as a solvent or vehicle for paints, varnishes and stains.

The report contains a number of protective suggestions, among them (1) the regular and systematic inspection of closed pipe lines or containers, (2) the freeing of receptacles of benzol vapor before entering them, (3) protection for workers who enter such enclosed spaces by the use of pressure air helmets or hose masks and by work in teams, (4) the diminution to exposure by the use of enclosed processes wherever possible, (5) the use of proper exhaust systems in removing vapors. No great reliance should be placed on masks and respirators, (6) a thorough medical examination before employment, excluding those who show organic lesions of heart, lungs or kidney, any hemorrhagic tendency, and anemia or unusual blood picture, (7) re-examinations with a systematic blood count every month during employment, (8) transfer to nonbenzol department of any employee who shows hemorrhages from mucous membranes of any organ or a decrease of white or red cells to the amount of 25 per cent or a hemoglobin below 70 per cent.

A very important development of this research study was the announcement that experimental work on animals has shown that *there were three other solvents that produced no constitutional symptoms when injected into the animals,* except for transient lessened activity, slight loss in weight and only a slight temporary reduction in the number of red and white cells. Inhalation experiments brought out these same facts even more clearly. *These three solvents are toluol, xylol and Hiflash naphtha.* The Council particularly urges manufacturers to use these relatively less harmful substances wherever manufacturing conditions make such a substitution possible.

C. O. Sappington, Oakland.

REFERENCE

1. Winslow, C. E. A.: Summary of the National Safety Council Study of Benzol Poisoning. Journ. Indust. Hyg., 9:61, February, 1927.

Proctology

Diverticulosis—Diverticulitis—It is not known how diverticula of the alimentary canal are formed but they occur in some part of the alimentary tract from the pharynx to the rectum. Undoubtedly some are congenital, as they may occur in early life and the pouches are then formed. by every layer constituting the normal bowell wall. Those which are a herniation of the mucous membrane through the muscular coats to a final association with the peritoneum, are acquired. These are probably a result of two factors: (1) weakness of the walls, especially at the attachment of the fat-laden appendices epiploicae or at the entrance or exit of the vessels: (2) increase of intraintestinal pressure associated with constipation or gaseous distention.

Spriggs and Marxer[1] describe from x-ray appearances: (1) A prediverticular state, when the normal segmentation of the bowel is absent, this being replaced by a ragged outline of little convex irregularities. (2) A stage of irritation following No. 1 represented by a concertina-like replacement of the smooth haustra. (3) Developed pouches or diverticula. (4) Diverticulitis or in-

flammatory processes arising about the necks of the pouches.

The findings of the roentgenologist are, therefore, very definite and are the only means of making a diagnosis unless diverticula are found during an abdominal operation.

Diverticula occur principally in the descending and pelvic colon, but may be found anywhere in the large bowel, and the appendix is not infrequently the seat of these pouches where they may produce symptoms resembling those of chronic appendicitis. Also it is not improbable, as Moynihan[2] remarks, that multiple rectal fistulae may be due to infection and rupture of rectal diverticula. Simple diverticula give rise to vague abdominal distress or gaseous distention in some part of the colon with some tenderness over the bowel, and these symptoms are accompanied or exaggerated by constipation. Diverticulous patients are on the average over fifty years of age. Treatment consists in prevention of infection of the pouches by removing systemic foci of infection, keeping the bowel evacuated by saline enemata and liquid petroleum and setting the somewhat spastic bowel at rest with atropin. An abdominal belt is useful, but massage of the abdomen should never be practiced.

Should diverticulitis supervene it will manifest itself as:

1. A "left-sided appendix" (acute infection of a pouch).
2. Peridiverticulitis, a hyperplastic inflammatory reaction around a number of diverticula producing a thickening of the bowel resembling carcinoma of the colon.
3. Inflammatory cicatrization of the diverticulous area producing stenosis and obstruction.
4. Abscess formation from localized penetration.
5. Perforation and peritonitis.
6. Perforation and fistulae formation of which vesicocolic fistulae are the commonest.

These secondary results may be retarded or even prevented by careful hygiene of the colon during the prediverticular or diverticular stage.

M. S. Woolf, San Francisco.

REFERENCES

1. Spriggs and Marxer: Multiple Diverticula of the Colon, Brit. M. J., May 21, 1927.

2. Moynihan, Sir B.: Diverticula of the Alimentary Canal, Brit. M. J., May 21, 1927.

Orthopedics

Heliotherapy in Joint Tuberculosis—Allison[1] has investigated this subject with his usual thoroughness, he having apparently visited the various centers in Europe, where the treatment is carried on most enthusiastically. He and his associates have practiced heliotherapy at the Peabody Home near Boston for a number of years.

Allison, who has done remarkable research work in bone tuberculosis, accepts the claims of brilliant cures by Rollier, Gauvain, and others, but leaves the reader in doubt as to his own faith in the treatment, and as to just what it accomplishes, and how. He says: "Heliotherapy, therefore, to our minds is a composite of many things which are aside from the light element, not in any way connected with the sun's rays." Others are not so cautious. They ascribe the cure directly to the sun's rays, and even specify as to which rays of the spectrum work the cure. According to one writer the short rays of the spectrum are the beneficial ones; according to another, the long rays. One says that the pigment of the skin keeps out the harmful rays, another says that it allows penetration of the healing rays.

Rollier, of course, maintains that the best results are to be obtained at the altitude where his sanitarium is located. The unregenerate inquires how many altitudes he tried before finding the correct one, or what chance helped him to find the exact spot at the first attempt. Allison believes that Gauvain gets as good results as Rollier at a less altitude. It is hard to tell exactly where the truth lies when authorities differ.

The point is, what shall we in California do with our tuberculous joints? We have such a range of climate and such difference in altitude that the decision of the proper place for treatment is difficult. Most of us have been unable to verify Rollier's claims. Possibly the safest way is to send all patients to Rollier, for his statistics are best.

For those unable to go on account of financial reasons, we can offer the following facts and theories in the line of consideration: Many sure cures have been promulgated for joint tuberculosis in the past thirty or forty years. Our perspective will improve if we look some of them over.

The most logical treatment is the operative treatment. If we clean out all the diseased tissue, and provide by drainage for the eventual exit of the rest, we would seem to be on the right track. At one time this was standard therapy, but it killed with such regularity that its vogue has almost passed. So bad were its results that many surgeons resorted to amputation as soon as they made the diagnosis of tuberculosis. Most of us would like to try something else first.

The injection treatment of tuberculous joints we always have with us. It is endemic, but when some investigator promulgates a new substance for injection or some new method of employing an old substance, this treatment becomes epidemic. Some years ago I searched the journals for references on the injection treatment since Mikulicz first advocated iodoform in 1881. Here are some of them: bone charcoal, iodin, phenol, arsenious acid and corrosive sublimate, acidulated solution of calcium sulphate, zinc chlorid, balsam of Peru, naphthol camphor, and formaldehyd solution. At present the injection treatment is not in good

repute, but we may safely prophesy a recrudescence before long.

The tuberculin treatment was brought out with a great flourish of trumpets. I believe it is still employed in some quarters, though it has been rather generally discredited.

Some twenty-five years or so ago Calot extolled the healing powers of salt water, combined with certain special plaster of Paris dressings, and if necessary, injection of certain substances into the cold abscess. Calot had quite a vogue. Hospitals were established at the seashore in many places. I had the luck to be in charge of the hospital at Coney Island for a number of years. Our patients had the best of food and care, and generally did well, but the joint tuberculosis ran its accustomed course. To San Franciscans, Calot's treatment will bring back fond memories of Salt Water Keck.

In a state medical meeting I have heard a man of some local prominence detail his cure of joint tuberculosis by painting with iodin, and by adhesive tape.

In the old days bitter fights were waged in orthopedic circles over the respective merits of braces and plaster of Paris. Those who advocated braces differed as to whether the apparatus should simply immobilize, draw the joint surfaces apart and immobilize, or draw them apart and allow motion—motion without friction, as it was called. The main thing was to devise some apparatus with some new gadget which helped in some mysterious way to cure the tuberculous joint.

All these cures had one thing in common: they were based on the clinical opinion of their originator, and no facts supported them except the before and after picture. Peruna has that. However, there is no particular reason why one should not try these various treatments as they come out, if one wishes. Occasionally one stumbles on the truth in that way.

If we are unwilling to pursue the hit or miss course, it might be well for us to demand of the advocate of a new treatment for tuberculous joints the same proof we demand in the case of other organs. If one appeared before a medical society claiming that one could cure endocarditis by injecting something into the blood stream, or appendicitis with sunlight, one would excite derision. It might be true, of course, but some proof besides photographs and case histories would be necessary.

If heliotherapy cures tuberculosis of joints, it should be easy to demonstrate the fact in animals. In all the years of its profitable exploitation this has never been done. Some of the same photographs of miraculously cured patients have been used year after year in different articles, and not one word of proof as to the correctness of the diagnosis, or positive examinations of tissues, or guinea-pig tests, has been submitted. If there is one thing established by careful investigation, it is that a diagnosis of joint tuberculosis without the demonstration of the tubercle bacillus cannot be made. If any clever surgeon doubts this let him take his operative material to the laboratory and look it over.

If he will do that he will learn much more than the fallibility of his diagnosis, for instance this fact: that everything which takes place in and about a tuberculous joint can be interpreted as nature's effort to cure it by destroying function. If he is wise he will imitate nature in his therapeutic efforts, and will view wonder cures with doubting eyes.

Leonard W. Ely, San Francisco.

REFERENCE

1. Surg. Gyn. and Obst., 1927, Vol. 44, p. 743.

Urology

Chronic Prostatitis—Chronic prostatitis is an exceedingly common disease. It is usually accompanied by vesiculitis. From the resulting prostatovesiculitis much of the pain and worry of man arises.

There are two types: the infective, an aftermath of a gonorrheal infection, and the so-called "aseptic" type, which is more a congestion of the prostate and vesicles than an infection. The latter condition is much more prevalent than is ordinarily supposed, 15 to 25 per cent of cases of prostatitis being non-venereal in origin.[1] Sexual excitement without relief of congestion by a subsequent ejaculation is a frequent cause.[2] Sexual excesses, especially when accompanied by overindulgence in alcohol, masturbation, withdrawal, and other sexual irregularities, will produce this aseptic prostatitis.

Rectal palpation in the chronically infected prostate reveals small hard areas of induration with softer areas between; vesicles are hardened and distended. In the "aseptic" prostatitis the congested prostate is quite large, boggy, and tender, and the vesicles are distended and often tense.

The symptoms of prostatovesiculitis are many and range from a slight "morning drop" and shreds in the urine, to nervous exhaustion. Back pain is the most pronounced and constant symptom, being present in 70 per cent of cases,[3] and the examination of a patient with this complaint is never complete without a thorough check of the prostate and vesicles.[4] Player found that 25 per cent of cases of backache were due to prostatovesiculitis.[3] In the majority of these cases the pain is referred, although a few are due to an arthritis, myositis, or sinusitis, with the prostate and vesicles acting as a focus. Inasmuch as the enervation of the prostate is sympathetic and para-

sympathetic, fibers ending in the prostate arising from the tenth dorsal to the third lumbar segments, the pain from a prostatitis may be referred to any part of the body which is supplied by these segments.[5] A sensation of fullness or an irritation in the perineum, and dull ache in the suprapubic region are symptoms often met with in prostatovesiculitis.[3]

The sexual neurasthenic or even the patient with lesser sexual symptoms is frequently an unwelcome visitor to the physician's office. There is usually a pathological condition causing the symptoms from which these distressed humans suffer, and very frequently this condition is a chronic prostatovesiculitis. Huhner[6] has found cases of sexual neurasthenia, severe depression, nervous exhaustibility and other sexual neuroses due to a chronic prostatitis or a congestion of the prostate; and has cleared them up with treatment for those conditions. The mental anxiety of the patient is far greater than the pathology in the prostate and vesicles would warrant. In some of these cases the patient has been worrying about his condition for years, and it is more difficult to put his mind at ease and convince him that his trouble is not serious than it is to cure the prostatovesiculitis present. These patients must be put on a rigid sexual program. Coitus at regular intervals is beneficial, but ungratified sexual excitement is very harmful, and the patient must be impressed with this fact. In the routine treatment of these cases, the manner in which the prostate is massaged is important. The vesicle on each side is stripped first by reaching as high as possible with the finger in the rectum, then each lobe is massaged with a downward and medial stroke. This expresses the secretion first from the vesicles, then from the prostate into the urethra.

Prostatovesiculitis, both infective and aseptic, is to be thought of in all patients who complain of back pain, of a sensation of fullness in the perineum or suprapubic region, and of sexual difficulties. By routine examination of the prostate the cause of many baffling symptoms may be discovered. Inasmuch as prostatovesiculitis is either caused or aggravated by ungratified sexual desire and sexual irregularities, rigid sexual hygiene is an important item in the routine treatment of these conditions.

ROGER W. BARNES, Los Angeles.

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Nutritional Disorders

Migraine—Since time out of mind medical literature has been replete with discussions of migraine. Theories as to its causes are many. For its treatment the list of remedies is as long in number as they each and all are short in value Evidently the disease is much more common than is usually recognized. In its irregular manifestations it undoubtedly plays a much greater part in certain functional diseases than realized; and very often its presence so obscures the clinical picture that a diagnosis of certain organic lesions is difficult and uncertain. We must agree that the causes and cure of this affliction afford a worthy field for research.

A perusal of the literature together with a somewhat close study of clinical cases would seem to warrant several tentative conclusions as to its nature:

1. That it is a specific, inherited, constitutional disease or fault, and ordinarily not acquired.

2. That it is primarily and essentially endocrine in character; as evidenced by its hereditary nature, its relation to other conditions and states in which there is a recognized readjustment in the endocrine system, such as puberty, pregnancy and lactation, the climacteric, menstrual periods, artificial menopause, etc.

3. That either directly or indirectly it involves a specific liver dysfunction which is not explained by such terms as are ordinarily applied to liver disease, organic or functional.

4. That definite, metabolic disturbance is present probably as a result rather than as a cause, though a physiologically invigorated metabolic function tends to prevent or mitigate the migraine explosions.

5. That the sympathetic nervous system is involved, probably, however, through a correlation with the endocrine system.

6. That it often manifests itself in such way that its migraine character is not recognized. The typical headache syndrome being absent, and the outstanding symptoms being nervous irritability, inordinate exhaustion and insomnia, with a state of gastro-intestinal peevishness and rebellion. Careful inquiry into the family and early history of these patients, and in fact into that also of the great majority of our so-called neurasthenics, reveals a definite and often strong migraine background. This form of the disease might well be called irregular migraine.

I believe it can be made evident that each of these several tentative conclusions is consistent with the idea of a single endocrine and metabolic cause; and while the discovery of this specific cause of migraine is only less desirable than the finding of a specific remedy for its relief, yet until the former is revealed, it probably will have to be said of the latter that the time is not yet.

D. D. COMSTOCK, Los Angeles.

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

PERCY T. PHILLIPS.....President
WILLIAM H. KIGER.....President-Elect
T. HENSHAW KELLY.....Vice-President
EMMA W. POPE.....Secretary-Editor

OFFICIAL NOTICES

Rates of Hotel Senator

Reservations for the annual meeting at Sacramento, April 30 to May 3 inclusive, should be made early. Following are rates for rooms at Hotel Senator, convention headquarters, fifty-seventh annual session of the California Medical Association:

Single room with private bath, $4 per day.

Double room, twin beds, private bath, $6 per day.

Parlor and bedroom, two private baths, $15 per day.

All of the rooms at Hotel Senator are outside rooms with private baths.

Interfraternal Banquet—The members of the several medical fraternities now located in Sacramento are planning an interfraternal banquet to be held on the first day of the coming session of the California Medical Association. The purpose of this gathering is to renew our old acquaintances and meet the newer brethren, and in this way bring about a more intimate association during the meeting from April 30 to May 3.

We would like to hear, by postal, from the members of the different medical fraternities who expect to attend the meeting in Sacramento so that arrangements can be made accordingly.

The members of the committee in charge are Drs. C. B. Jones (chairman), E. W. Beach, Orrin Cook, Frank Reardan, and George A. Foster.

Train Service

Sacramentoan — The Sacramentoan is a Southern Pacific day train, with direct service between Sacramento and Los Angeles. Leaves Los Angeles in the early morning and arrives in Sacramento on the evening of the same day.

New train schedule, effective on March 1, will be printed in the April issue of CALIFORNIA AND WESTERN MEDICINE.

Early Medical History of Sacramento

Sacramento, the meeting place for the fifty-seventh annual session of the California Medical Association, began its career with a health problem of terrible magnitude. Today, seventy-eight years after this devastating scourge of Asiatic cholera, the following excerpt from the history of Sacramento by Thompson and West taxes credulity. Those who attend the annual meeting in April may well contrast Sacramento of 1849 with Sacramento of 1928 and the health situation of 1850 here graphically described with that of today.

Sutter's Fort

The Cholera in Sacramento

The cholera made its first appearance in Sacramento on the 20th of October, 1850, when an immigrant by sea was found on the levee, in the collapsing stage of the disease. The infection was brought to San Francisco on the same steamer which conveyed the intelligence of California's admission to the Union, and reached Sacramento before the city had recovered from the demoralizing effects of the squatter riots. As usual in such cases the local papers endeavored to conceal the extent of mortality, and their files of that date give no adequate idea of the fearful scourge. On the 24th of October, the city physician reported seven cases of cholera to the council, five of which were fatal. Some of the doctors attempted to quiet public apprehension by the opinion that the malady was only a violent form of the cholera morbus, and the *Times* "felt confident that there was very little danger, and had not heard of a single case where the patient had not been previously reduced by diarrhea." On the 27th, six cases were reported, and the *Times* "hoped that some precautionary measures would be taken," etc. On the 29th, twelve cases appeared; on the 30th, nineteen, and it was no longer possible to conceal the presence of the ghastly destroyer. A Sacramento correspondent of the *Alta,* November 4, says: "This city presents an aspect truly terrible. Three of the large gambling resorts have been closed. The streets are deserted, and frequented only by the hearse. Nearly all business is at a standstill. There seems to be a deep sense of expectancy, mingled with fear, pervading all classes. There is an expression of anxiety in every eye, and all sense of pecuniary loss is marked in a greater apprehension of personal danger. The daily mortality is about sixty. Many deaths are concealed, and many others are not reported. Deaths during the past week, so far as known, 188."

On the 14th of November, the daily mortality had decreased to twelve, and on the seventeenth the plague was reported as having entirely disappeared.

The precise number of deaths resulting from cholera can never be known, as many were returned as having died of dysentery, fevers, etc., for the purpose of quieting public apprehension, and no exact records of the event are accessible. The only reliable account extant was written by Dr. John F. Morse, ten years afterward, for Colville's Directory. Doctor Morse was one of the most active and humane physicians during the prevalence of the calamity, and parts of his narrative are almost too shocking for transcription here; but no one who ever knew that good man will think of calling in question his credibility, now that he, too, has passed away. Having referred to the general rejoicing on the admission of California to the Union, Doctor Morse continues: "But, alas! the exuberance of spirit thus enkindled, the joyous and buoyant feelings thus excited, were but the illusive precedents of one of the most appalling calamities

Sacramento, 1849

that had ever yet set its seal of distress upon the destiny of the Valley City.

Every successive day brought intelligence from the bay that the newly arrived passengers were still dying with cholera. In the feverish state of mind that existed in the community, there was no hope of escape. This alone, with the direction then given to fears, was sufficient to coerce the disease into a terrific development. It scarcely required an imported case to establish a panic more to be dreaded than its cause. But the first case that occurred was a steerage passenger of the steamer which brought the disease. Early in the morning of the 29th of October, a person was found on the levee in the collapsing state of the malady. Medical aid was administered, but the disease had taken too deep a hold of its victim. I saw him at sunrise; he was then expiring from the effects of the disease. The indications presented by his death were not calculated to abridge the depressing fear in the community. The cholera was now indeed in our city, and from mouth to mouth the story was communicated, so improved in all the features of a horrible description, as to darken the city with the very pall of death in a few hours.

In six days from the time of its inception it was making such progress that regular burials were but slightly attended to, and nursing and attention were not unfrequently entirely overlooked. Money could scarcely buy the offices of common kindness, and affections were so neutralized by the conflicting elements of selfishness that but little could be done to arrest the course of the disease. The victims of the malady did not seem to be confined so much to those of intemperate and irregular habits, as had been the case in almost all previous manifestations of the disease. People of the most industrious, careful and regular habits seemed alike vulnerable to the dreadful enemy. In a few days many of our most substantial citizens were numbered among the victims of the sweeping epidemic. It was reported that 150 cases occurred in a single day; but such was the confusion and positive delirium of the community that no proper records were made, nor can any accurate data now be found in respect to the epidemic of 1850. As soon as the daily mortality became so great as to keep men constantly employed in carrying away the dead, the citizens began to leave the town in every direction, and in such numbers as to soon diminish the population to not more than one-fifth of its ordinary standards. In this pestilential reign of terror and dismay the most dreadful abandonments of relatives and friends took place. Those who were willing to forget self and become the visitants of mercy constituted but a small and meager proportion of the many, who, following the instincts of nature, sought only to preserve themselves. There were a few men, as there always will be, whose warm hearts throbbed with an uncontrollable anxiety to convey relief to the distressed and the dying, and who lingered around the death scenes of the epidemic, so spellbound by sympathy that they endured anything and everything as long as there remained a solitary hope of even palliating the agony of dissolving nature. These men are found by and are known to those who constitute the heroes of epidemics. They consisted of an occasional brother, whose inwrought feelings of fraternity were sustained by a maternal bias that made them as enduring as life. I will mention one name, my motive for which will be readily acknowledged more as the extortion of truth than the result of partisan partiality—that of John Bigler, the present Governor of California. This man, with strong impulses of sympathy, could be seen in every refuge of distress that concealed the miseries of the dying and the destitute. With a lump of gum camphor now in his pocket and anon at his nostrils, he braved every scene of danger that presented, and with his own hands administered relief to his suffering and uncared for fellow beings.

The rapid spreading of the epidemic gave to the physicians of the city no rest, day or night. As might be expected, they were falling like the foremost soldiers of a desperate charge, and ere the cholera had subsided, seventeen of their number were deposited in the Sandhill Cemetery of our city. A professional mortality never before known; an inroad of death from which but a fraction more than two in three escaped with life, and not one in three from the disease! And yet, not a single educated physician turned his back upon the city in its distress and threatened destruction.

This awful calamity lasted in its malignant form only about twenty days; but, by the unsystematic records of the times, the number of deaths cannot be ascertained. Besides those who died in the city, many were overtaken by death in other places, and upon the road, in their desperate efforts to escape by running from the enemy. In the latter part of the epidemic the authorities procured the use of a large frame building on L Street, where the destitute cholera subjects were taken and provided for. The abatement of the disease was much longer than the period of its inception and increase, and commenced just as soon as the frequency of death had familiarized people with the frightful scenes around them, and rendered them less defenseless from a paralyzing fear. By the time the disease had almost disappeared the city was nearly depopulated, and there were not a few who thought the Levee City was dead beyond the possibility of resurrection.

But those who supposed that Sacramento and Sacramentans could be so easily crushed had not learned their character. The very moment mortality began an obvious retreat from the premises, that moment those who survived their flight returned. Those who abided by the city in its distress reacted upon the calamities of the town with such an elastic and vigorous energy as to completely transform the appearance of the place in a few days. The confidence of the people in the health of the city was almost immediately restored, and business communications were reopened with the mines under the most encouraging circumstances. For a few weeks a good business was realized, and the broken and beautiful winter that followed imparted a vitality to the town that could not have been anticipated by one who had contemplated its destiny through the gloomy scenes of October."

The present writer, who was one of the hardly surviving victims of that swift and terrible scourge, can certify that Doctor Morse has not overdrawn the horrors of the situation. What with floods and fires, insurrections and the plague, the very stars seemed to fight against Sacramento in her infancy, and the foundation of her latter prosperity was laid upon the

ashes of her pioneers. Before the disastrous visitation of the cholera, Doctor Stillman walked through the Sandhill Cemetery and counted eight hundred graves that had not yet been sodded over, and how many more were added by the still more terrible destroyer is not found recorded in the history of the time. Of a company of forty men who came out from New Haven on the infected schooner Montague, more than half died after her arrival, and after her departure from Sacramento for Panama, the captain, second mate and six passengers died of cholera before leaving San Francisco Bay.

COMPONENT COUNTY SOCIETIES

CONTRA COSTA COUNTY

The Contra Costa County Medical Society held the January meeting on the 21st, at the nurses' home of the County Hospital at Martinez.

The subject of "Unresolved Pneumonia" was discussed by the members.

Those present: Drs. H. L. Carpenter, W. E. Cunningham, D. M. Keser, L. StJ. Hely, R. Powell, Richmond; F. L. Horne, W. A. Rowell, Crockett; S. N. Weil, Selby; J. Beard, E. B. Fitzpatrick, E. Merrithew, G. W. Sweetser, Martinez. Non-members—I. O. Church, Buckman, Martinez; E. B. Todd, Concord. Mr. Pomeroy, Martinez; Miss A. Driscoll, Richmond.

A great deal of inspiration and a desire to be better acquainted with the manner of publicly discussing subjects before the society resulted from this forum meeting. Dr. I. O. Church, the new full-time health officer of the county, was introduced by Doctor Hely. Doctor Church spoke of the amount of work that is yet to be done for the welfare of the county and asked for the cooperation of the doctors of the society. We are sure he will receive it.

A delightful luncheon was served by the nurses of the County Hospital.

* * *

A very interesting and instructive meeting was held by the Contra Costa County Medical Society on February 11 at the offices of Doctors Cunningham, Carpenter, and Bumbarner, in Richmond.

The subject of "Gall-Bladder Disease" was thoroughly discussed with reference to its etiology, diagnosis and treatment. A great amount of discussion was heard from all members present and a good deal of benefit was derived from it. Dr. E. A. Todd of Concord was voted into the society.

There is a good that comes from the new method the society has adopted in the presentation of subjects by the members themselves. There seems to be more interest and lively discussion by members heretofore unheard.

Refreshments were enjoyed at Martin's Grill.

The next meeting is to be held in Martinez, March 10.

S. N. Weil, *Secretary.*

FRESNO COUNTY

At the February meeting of the Fresno County Medical Society Dr. Wallace I. Terry of San Francisco delivered an interesting lecture on "The Surgery of Gastric and Duodenal Conditions." While the duodenal ulcer is the more common, Doctor Terry considers the gastric ulcer the more serious, since bleeding is more frequent, and 10 to 20 per cent become malignant.

Slides were shown to demonstrate the technique of gastric and duodenal surgery. This was especially appreciated.

John M. Frawley, *Assistant Secretary.*

LOS ANGELES COUNTY

Dr. F. W. Lynch, professor of obstetrics and gynecology at the University of California, was the principal speaker at a dinner meeting given in his honor by the Los Angeles Obstetrical Society on February 9. His subject was "Five-Year End-Results in Carcinoma of the Cervix Uteri." He detailed in a most convincing manner the results obtained with radium and with surgery during the period of 1916 to 1922. Thus far he has been disappointed in the use of radium in operable cases, but has found that in inoperable patients there is a salvage of approximately 8 per cent secured through radiation. Extensive surgery in the early cases still is the preferred choice. In the discussion Dr. Titian Coffey stressed the prophylaxis of cervical cancer by repair of the lacerations from childbirth. Dr. Albert Soiland stressed the increasing trend toward the use of radium.

Interesting case reports were presented: Dr. H. C. Seaver on "Dermoid Cyst with Perforation of the Small Intestine"; Dr. A. H. Zieler, "Sixty-Five Year Old Fetus"; Dr. Walter A. Bailey and Dr. Lawrence Parsons, "Chorio-Epithelioma Following Ectopic Pregnancy."

Over 150 members of the society and their guests attended the dinner. Doctor Lynch was made an honorary member of the society, the others being Dr. J. W. Williams and Dr. M. L. Moore.

William Benbow Thompson,
Secretary Obstetrical Section.

PLACER COUNTY

The January meeting of the Placer County Medical Society was held Saturday evening, January 14, in the beautiful new Highland Sanitarium at Auburn. Owing to the death of the late president, Dr. Robert J. Nicholls, Vice-President Dr. J. Gordon Mackay presided.

There were present the following members and visitors: Members—Drs. J. Gordon Mackay, Robert A. Peers, G. H. Fay, Monica S. Briner, C. C. Briner, S. Kalman, Mildred E. Thoren, R. H. Eveleth, C. E. Lewis, Max Dunievitz, and J. W. Russell. Visitors—Drs. Leo P. Bell, J. Edward Harbinson, E. Eric Larson, and John D. Lawson, all of Woodland; Dr. Thomas C. O'Connor, Jr. of Colfax, Dr. P. D. Barnes of Loomis, and Mr. Thoren of Weimar.

Dr. Thomas C. O'Connor, Jr. of Colfax was elected to membership in the society.

Resolutions on the deaths of Dr. Robert J. Nicholls and Dr. S. H. Rantz were read and adopted.

A literary program consisting of a symposium, Differential Diagnosis of Upper Abdominal Lesions, was presented by the members of the staff of the Woodland Clinic.

Dr. J. Edward Harbinson presented the medical side, discussing the various points of diagnoses of upper abdominal lesions, especially as to differentiation between carcinoma, duodenal and gastric ulcer, and cholecystitis with or without stones.

Considerable emphasis was laid upon the value of complete roentgen examination both by the opaque meal and the use of tetraiodophenolphthalein. It was pointed out that clinical history and physical examination are important points and that it is especially necessary to elicit the early symptoms of the disease, inasmuch as differentiation may be accomplished through this means.

The preparation for operation, in cases where that course seems to be advisable, was emphasized as well as the postoperative observation.

The speaker discussed very fully alkalosis as related to these conditions in both preoperative and postoperative cases. The blood chemistry and clinical findings attendant thereon were gone into in considerable detail.

Doctor Larson, considering the surgical side, began with a history of gastro-enterostomy, describing its evolution to the present methods of performing that operation.

Various types of operation used for the treatment of gastric ulcer and malignancy were noted, with the

observation that gastric resection is the operation of choice in both these conditions. For duodenal ulcer when there are indications against medical treatment, gastro-enterostomy is the operation of choice.

Pyloroplasty without gastro-enterostomy was mentioned as being a procedure, the wisdom of which is doubtful.

In treatment of gall-bladder disease cholecystectomy has been found to be advisable in all cases except in rather rare instances where the procedure would seriously endanger the patient's life, as especially noted in acute cholecystitis.

The symposium was closed by Dr. John D. Lawson, roentgenologist of the Woodland Clinic, who by means of lantern slides demonstrated the various types of lesions that occur in the upper gastro-intestinal tract, with especial emphasis on cholecystography in the diagnosis of gall-bladder disease as well as its value in demonstration of stones.

The very complete and illuminating symposium was generally discussed by the members present, particular interest being shown by those present in the speakers' description of the condition of alkalosis.

Following adjournment a luncheon was served by the management of the hospital.

ROBERT A. PEERS,
Secretary.

SAN BERNARDINO COUNTY

Minutes of the meeting of the San Bernardino County Medical Society, held at the San Bernardino County Hospital, February 7, at 8 p. m.

The meeting was called to order by the president at 8:15. Minutes of the previous meeting were read and approved.

Doctor Moseley reported for the County Hospital committee. The report was accepted and the committee was discharged.

Doctor Curtiss reported for the committee on the revision of the constitution, and was instructed to make further report and submit concrete recommendation.

The communication from the Los Angeles Clinical and Statistical Section was read.

Announcement was made regarding prompt payment of dues.

The president reappointed the present milk commission. Doctor Finkleberg replacing Doctor Owen.

Doctor Abbott, speaking for the members in his locality, invited the society to hold its next meeting at the San Antonio Community Hospital. The invitation was accepted.

The program of the evening was then entered upon:

Radiographic Manifestation of Metastatic Malignancy—Dr. Carl H. Parker of Pasadena. Discussion opened by Dr. C. C. Owen.

Remarks on the Etiology and Treatment of Cancer—Dr. Montrose T. Burrows of Pasadena. Discussion opened by Dr. G. G. Moseley.

There were forty-two present.

Luncheon was served at 10:30 p. m. after adjournment of the meeting.

E. J. EYTINGE, *Secretary.*

SAN DIEGO COUNTY

The completed lists of officers for 1928 for the following organizations are here recorded:

County Medical Society—J. M. McColl, president; L. H. Redelings, vice-president; W. H. Geistweit, Jr., secretary; Willard Newman, treasurer. Editors: Robert Pollock, W. H. Geistweit, Jr.

Council—L. H. Redelings, chairman; J. M. McColl, W. H. Newman, W. H. Geistweit, Jr.; William Belford, E. C. Lee, A. E. Elliott, R. Donnell, Martha Welpton, S. J. McClendon.

Membership Committee—S. J. McClendon, Frank St. Sure, S. J. Ratty.

Child Welfare—L. B. Mahan, E. B. Porter, Rieta Hough, B. F. Eager, Ross Carter.

County Hospital—W. H. Potter, C. O. Tanner.

Medico-Legal—Frank Carter, H. S. Anderton, W. D. Rolph.

Program—Ed Chamberlain, R. C. Lounsberry, W. O. Weiskotten.

Mercy Hospital staff officers—E. P. Chartres-Martin, president; Frank Carter, vice-president; C. O. Tanner, secretary.

Executive Committee—E. C. Lee, D. K. Woods, T. O. Burger, L. H. Redelings.

Scripps Memorial Hospital—H. G. Lazelle, president; Martha Welpton, vice-president; E. F. F. Copp, secretary.

San Diego County General Hospital—Fraser Macpherson, president; D. K. Woods, vice-president; J. C. Dement, secretary.

San Diego Medical Library Association—Dr. C. E. Howard, president; O. K. Bullard, D. D. S., vice-president; Dr. Willard H. Newman, secretary-treasurer; Mrs. Mildred Farrow, librarian; Doctors Howard, Hoover, Emery, Geistweit, Kyes, Bullard, E. J. Farrow, Lazelle, Pollock, Porter, Lounsberry, Walsh, directors.

Eighteen applications for membership in the Medical Society are at present under consideration.

The Academy Lectureship—The third annual course of medical lectures presented by the Academy of Medicine has passed into history, leaving us not only better informed, but with a keener desire for culture. Nothing could better express the interest of the profession in the ever present subject of tuberculosis than the large attendance which kept up throughout the week. Dr. Allan Krause has that magnetic hold on his audience which results from the impression given of authority to speak on a subject of which he is a master worker and faithful recorder. Night by night he led his hearers, many of whom came long distances to do him honor, through the intricacies of etiology, diagnosis and treatment, making the subject at each turn of the way seem simple beyond measure; until when he summarized the whole matter in a fascinating historical review punctuated with biographic milestones of our advance in an understanding of this gigantic subject, his listeners—specialists and commoners alike—were conscious of a renewal of pride in their humble part in so glorious a campaign. Nothing we can say would add to the luster of Doctor Krause; so we simply record the fact that we, the profession of San Diego, are glad to have had the privilege of sitting at his feet.

ROBERT POLLOCK.

SAN FRANCISCO COUNTY

On March 1, 1928, the San Francisco County Medical Society will begin the publication of its monthly bulletin in an enlarged form, to contain, in addition to the usual information and scientific programs for the ensuing month, matters of interest to the members of the medical profession.

This enlarged bulletin will serve a useful purpose in enabling the officers of the society to place before its members those things which are being talked about in the society, plans for future development, matters relating to public health and anything of any importance to the medical profession.

News concerning the goings and comings of medical men will be published, and the medical golfers will have a column to themselves. In other words, the society hopes to have a family newspaper published monthly.

T. HENSHAW KELLY, *Secretary.*

SAN JOAQUIN COUNTY

The regular meeting of the San Joaquin County Medical Society was held February 2 in the hall of

the Medico-Dental Club, 242 North Sutter Street. Dr. John J. Sippy, president, in the chair.

The meeting was called to order at 8:45 p. m., with an attendance of twenty-seven. Those present were: Drs. N. P. Barbour, J. W. Barnes, W. Biethan, C. O. Bishop, E. L. Blackmun, C. A. Broaddus, F. J. Conzelmann, J. D. Dameron, J. F. Doughty, L. Dozier, P. B. Gallegos, S. Hanson, J. P. Hull, H. E. Kaplan, B. M. Krout, G. McCoskey, R. T. McGurk, F. G. Maggs, D. R. Powell, G. H. Rohrbacher, G. H. Sanderson, J. J. Sippy, F. B. Sheldon, M. H. Smyth, A. L. Van Meter, G. J. Vischi, N. E. Williamson, and Dr. E. B. Towne of San Francisco, guest and speaker of the evening.

The minutes of the previous meeting were read and approved.

A communication from the secretary of the California State Medical Association was read relative to the proposed amendments to the Constitution and By-Laws of the State Association.

The president stated that he would call a meeting of the board of directors to consider the proposed amendments.

The Chair declared to be now in order for consideration the amendment to the constitution, contained in the following resolution proposed at the last meeting by Doctors Kaplan, Dozier, Sanderson, Holliger, and D. R. Powell.

"Resolved, That the officers of the San Joaquin County Medical Society be elected by a popular ballot;

That the president and vice-president serve, ex-officio, as members of all standing committees;

That the secretary of the society be a member of the board of directors;

That the nominations take place one month prior to the election and that the ballots be sent to all members of the society so that they can vote whether present or absent."

Dr. D. R. Powell spoke on the amendment proposed by this resolution and the method of considering it, and moved that a vote be taken to ascertain whether the society desires to elect officers from the members at large instead of, as at present, from the board of directors.

Motion seconded and carried.

The Chair then declared that the society desired to elect officers from members at large.

Dr. D. R. Powell moved that the Chair be authorized to appoint a committee of five to recast, with proper phraseology, the proposed amendment covering the nomination and election of officers as decided by the previous motion; and to present it for action at the next meeting.

Motion seconded and carried.

The Chair appointed as a committee, Doctors Kaplan, Dozier, D. R. Powell, Dameron, and Hull.

The two motions made by Dr. D. R. Powell accomplished the object of the resolution for amendment, and it was moved by Doctor Dozier that the amendment be tabled.

Motion seconded and carried.

The president commented on the untimely passing of one of our members, Dr. Charles E. Stagner, and announced that a floral offering together with a letter of condolence had been sent the bereaved family. He then presented Dr. E. B. Towne, who delivered a most interesting and practical talk on the subject, "Injuries of Peripheral Nerves."

"Good results may be expected if treatment is carried out systematically over a long period of time," said the speaker. Methods of examination of muscular action, electric response of muscles, and sensory functions were described. Treatment is operative and non-operative, and in every case there must be intelligent cooperation between surgeon, physiotherapist, and patient. The non-operative treatment consists in constant relaxation of the paralyzed muscles by proper splinting, and nutritional treatment to keep up the volume and tone of the affected muscles. This consists in the application of moist heat, massage, and assisted exercises after function begins to return. Indications and contraindications for operation were considered in detail. The fact that there is only one satisfactory method of repair, end-to-end suture of freshened nerve ends, was especially emphasized. All plastic operations are useless. Gaps may be overcome by loosening the nerve, relaxation by change of position of joints, transposition of the nerve or by two-stage operations. Using the musculospiral nerve as an example, some typical illustrations of cases were described, especially from the point of view of prevention of injury of that nerve. Doctor Towne briefly described the operation of trigeminal neuralgia as suggested by Spiller, and the good results that have been obtained from it. Many members asked questions, which the doctor answered in a most practical way.

There being no further business the Chair declared the meeting adjourned at 10:30 p. m.

FRED J. CONZELMANN, *Secretary.*

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SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held on Monday evening, February 13, at St. Francis Hospital.

The meeting was called to order by President Sansum.

The minutes of the December regular meeting and the January annual meeting were read and approved.

Doctor Kempf then gave a most interesting talk on "The Physical Basis of Functional Neuroses and Psychoses."

This was discussed by Doctors Van Paing, Brown, Nuzum, Williams, Lamb, and Koefod.

The society then went into executive session, and it was moved by Doctor Williams and seconded by Doctor Means, that the following resolution be adopted:

"Resolved, That the Nurses' Registry conducted by Miss Davis at the Cottage Hospital, and all other private Nurses' Registries, accept on their lists only those nurses who have registered with and are members of the Santa Barbara County Nurses' Association."

The transfer card of Dr. W. S. Franklin was read, and it was moved, seconded and carried, that he be admitted into the society.

It was moved, seconded and carried, that the resignations of Doctors Soper and Vandevere be accepted.

It was moved by Doctor Means and seconded by Doctor Henderson that Dr. Alex C. Soper be made an honorary member of the Santa Barbara County Medical Society and that he be notified of the same.

Copies of the proposed changes of the Constitution and By-Laws of the state society were referred to Doctors Ullmann and Nuzum.

The president appointed an auditing committee of Doctors Means and Williams to audit the books of the secretary-treasurer for the past year.

There being no further business the meeting adjourned.

W. H. EATON, *Secretary.*

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SANTA CRUZ COUNTY

At the January meeting of the society it was decided to concentrate our efforts on quarterly gatherings during 1928. In order to make these meetings as complete as possible and assure a diversified program for the year, it was deemed advisable to have one member of the society act as a committee of one to arrange the scientific programs. Dr. J. C. Farmer of Felton will carry on this work during 1928.

The next meeting will be held in March under the auspices of the San Lorenzo Valley Chamber of Commerce and will probably take place in Ben Lomond, in the Santa Cruz mountains. Dr. J. H. Shepherd of

San Jose, our district councilor, will be with us at that time. Other speakers have not been decided upon as yet.

SAMUEL B. RANDALL, *Secretary.*

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STANISLAUS COUNTY

The February meeting of the Stanislaus County Medical Society was held at the Hotel Hughson, February 10, following the usual 6:30 dinner, Dr. J. W. Morgan presiding.

Those present were: Doctors Morgan, Maxwell, W. Smith, Allen, Cooper, Porter, Hennemuth, Surryhne, Finney, Jensen, McPheeters, Clark, Meyer, Reamer, Stewart, McKibbon, Mottram, Morris, Hiatt, and Faulkner.

The minutes of the previous meeting were read and approved. A letter from the California Medical Association was read officially notifying the component societies of the proposed amendments to the Constitution and By-Laws.

It was suggested that the March meeting be in charge of the members who are eye, ear, nose and throat specialists, and a committee was appointed consisting of Doctors Meyer (chairman), Porter, Reamer, Mottram, and Morris to obtain the speaker.

Dr. William B. Faulkner of San Francisco then addressed the society on "Thoracic Surgery" and showed a case of diaphragmatic hernia in which the stomach had reached the level of and was adherent to the clavicle, stating this to be the only case in the literature where the stomach had ascended so high. He showed many instructive slides of normal and pathological chests and spoke briefly on the surgical treatment of empyema and lung abscess.

Doctor Faulkner was given a vote of thanks and the meeting was then adjourned.

R. STEWART HIATT, *Secretary.*

CHANGES IN MEMBERSHIP

New Members

Alameda County—E. W. Ayer, Julius Montalvan, A. Lyle Winslow, Oakland; William E. Judson, Livermore.

Butte County—James G. Hepplewhite, Chico.

Contra Costa County—E. B. Fitzpatrick, Martinez.

Lassen-Plumas County—C. I. Burnett, Susanville.

Los Angeles County—V. L. Andrews, Frederick S. Balyeat, Stanislaus J. Becka, John Henry Clayton, Herbert R. Crase, F. H. Falconer, Lowrie Grow, Joseph J. Hilton, Edward H. Jacobs, O. Donovan Johnson, Raymond D. McBurney, Los Angeles; Henry G. Bieler, Pasadena; Clayton C. Campbell, Max Marks, Stirling Pillsbury, Long Beach; Yugve J. Nyvall, San Pedro.

Mendocino County—L. R. Leidig, Mendocino.

Merced County—Edward A. Jackson, Dos Palos.

San Francisco County—Henry P. Buckingham, Leo Garland, Adam A. Haas, Frederick C. Keck, Mary H. Loveless, Leo L. Meininger, Howard E. Newson, George P. Purlenky, Robert S. Sherman, Beverly Simpson, Mary J. Stiles, San Francisco.

San Diego County—Ross O. Taylor, San Diego.

Santa Barbara County—Frank G. Crandall, Francis J. Hombach, Clarence T. Roome, Santa Barbara.

Transferred Members

S. H. Babington, from Mendocino County to Alameda County.

E. R. Brooks, from Placer County to Alameda County.

Robert T. Boyd, from Mendocino County to Kern County.

C. R. Campbell, from San Bernardino County to Santa Clara County.

Lenore D. Campbell, from San Bernardino County to Santa Clara County.

A. N. Donaldson, from San Bernardino County to Santa Clara County.

S. C. Glassman, from San Bernardino County to Santa Clara County.

S. Kalman, from Siskiyou County to Placer County.

Norman D. Morrison, from San Francisco County to San Mateo County.

Christian A. Nies, from San Bernardino County to Los Angeles County.

Houston H. Parsons, from Los Angeles County to San Bernardino County.

W. W. Peterson, from Alameda County to Los Angeles County.

H. E. Price, from San Joaquin County to Los Angeles County.

Lewis H. Stanton, from Orange County to Los Angeles County.

Henry M. Thompson, from Los Angeles County to San Francisco County.

Resignations

Charles E. Mooser, Oakland.

John M. Schimmenti, Los Angeles.

Deaths

Fox, Willard Henry. Died at Los Angeles, December 7, 1927, age 66 years. Graduate of Albany Medical College, New York, 1888. Licensed in California, 1895. Doctor Fox was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Goodrich, Edwin Gilman. Died at Los Angeles, age 61 years. Graduate of College of Physicians and Surgeons, University of Southern California, 1903. Licensed in California, 1903. Doctor Goodrich was a member of the Los Angeles County Medical Society, the California Medical Association, and the American Medical Association.

Halbert, Howard Valmore. Died at Los Angeles, age 32 years. Graduate of Rush Medical College, Illinois, 1921. Licensed in California, 1924. Doctor Halbert was a member of the Los Angeles County Medical Society, the California Medical Association, and the American Medical Association.

Nice, Downing Decatur. Died at Three Rivers, December 17, 1927, age 59 years. Graduate of College of Physicians and Surgeons, Keokuk, Iowa, 1890. Licensed in California, 1907. Doctor Nice was a member of the Tulare County Medical Society, the California Medical Association, and the American Medical Association.

Roth, Leon Joseph. Died at Los Angeles, January 30, 1928, age 55 years. Graduate of Medical Department, University Southern California, 1901. Licensed in California, 1901. Doctor Roth was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Stagner, Charles Elmer. Died at Stockton, January 28, 1928, age 44 years. Graduate of Cooper Medical College, California, 1912. Licensed in California, 1913. Doctor Stagner was a member of the San Joaquin County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Sutton, Irwin Coleman. Died at Los Angeles, January 25, 1928, age 32 years. Graduate of College of Physicians and Surgeons, Medical Department University of Southern California, 1919. Licensed in California, 1919. Doctor Sutton was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Williams, Charles Crosby. Died at Los Angeles, January 18, 1928, age 73 years. Graduate of the Harvard University Medical School, Boston, Massachusetts, 1886. Licensed in California, 1899. Doctor Williams was a member of the Los Angeles County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

UTAH STATE MEDICAL ASSOCIATION

W. R. CALDERWOOD, Salt Lake.....President
E. H. SMITH, Ogden.....President-Elect
FRANK B. STEELE, Salt Lake.....Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....
.....Associate Editor for Utah

OFFICIAL NOTICES

The following official bulletin has been issued by the State Board of Health for the information of the profession during the locally increased incidence of cerebrospinal meningitis in Cache County. We carry it to stress the points included in the interests of prevention:

Utah State Board of Health—Epidemic Cerebrospinal Meningitis—Threatening outbreaks of meningococcus meningitis (epidemic cerebrospinal meningitis) have appeared in several sections of the state, and the active cooperation of health officers, physicians, and citizens in general is urged for the prevention of the spread of the disease. With this object in view the following facts concerning the disease and approved methods of control are submitted for careful consideration and guidance:

Infective Agent—Meningococcus.

Source of Infection—Discharges from the nose and mouth of infected persons. Clinically recovered cases, and healthy persons who have never had the disease but have been in contact with cases of the disease or other carriers, act as carriers and are commonly found, especially during epidemics.

Mode of Transmission—By direct contact with infected persons and carriers, and indirectly by contact with articles freshly soiled with the nasal and mouth discharges of such persons.

Incubation Period—Two to ten days, commonly seven. Occasionally for longer periods when a person is a carrier for a time before developing the disease.

Period of Communicability—During the clinical course of the disease and until the specific organism is no longer present in the nasal and mouth discharges of the patient. The same applies to healthy carriers so far as affects persistence of infectious discharges.

Methods of Control—Early recognition of the disease—clinical symptoms, confirmed by the microscopic and bacteriological examination of the spinal fluid, and by bacteriological examination of nasal and pharyngeal secretions.

Isolation of the infected persons for fourteen days after onset of the disease and until the nasal and pharyngeal secretions are proved by bacteriological examination to be free from the infecting organism. Other members of the family to be forbidden to attend school, places of amusement or public gatherings.

Quarantine of carriers until the nasal and pharyngeal secretions are proved by bacteriological examination to be free from the infecting organism.

Search for carriers among families and associates of recognized cases by bacteriological examination of posterior nares of all contacts.

Education as to personal cleanliness and necessity of avoiding contact and droplet infection.

Prevention of overcrowding in living quarters and other places.

Concurrent disinfection of discharges from the nose and mouth and of articles soiled therewith.

Terminal disinfection—thorough cleaning, sunning and airing of house.

Immunization by the use of vaccines is still in the experimental stage.

The foregoing measures, which in part are supplementary to the official quarantine rules, are recommended for adoption during the epidemic prevalence of the disease in any part of the state.

The laboratory of the State Board of Health will promptly render bacteriological assistance upon the request of any physician or health officer. Instructions for collecting specimens for testing, etc., will be furnished when desired.

Immediate intraspinal injection of meningococcus serum is recommended in all cases of the disease; also the intravenous administration of the serum in severe septic cases. If used intravenously a preliminary injection of 1 cc. one hour in advance for desensitization is advised.

Until further notice health officers are requested immediately to report all cases and deaths to the State Board of Health.

T. B. Beatty, M. D.,
State Health Commissioner.

January 19, 1928.

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The annual meeting of the Salt Lake County Medical Society was held in the assembly room of the Medical Arts Building, Salt Lake City, Monday, December 12, 1927.

The meeting was called to order at 8:10 p. m. by President W. G. Schulte. Seventy-three members and two visitors were present.

The minutes of the previous regular meeting and the special meeting held December 5, 1927, were read and accepted without correction.

A. C. Callister presented a patient on whom he had operated for bilateral cervical ribs. Discussed by A. J. Hosmer.

The following men were unanimously elected to membership in the society: Charles E. Beymer, R. W. Quick, and Eugene Worley, by transfer from Cache County Medical Society.

A film entitled "How Biologicals are Made" was shown by courtesy of Parke, Davis and Company.

The proposed new constitution of the Utah State Medical Association was read by the secretary. The proposed amendment to the by-laws raising the dues from $10 to $15 was read by the secretary. This was voted upon and lost by a vote of forty-five to twenty-seven.

F. B. Steele moved that the Salt Lake County Medical Society waive jurisdiction over Doctor Goodwin, who resides in Park City. Seconded and carried.

President W. G. Schulte addressed the society suggesting that our finances be increased and as much business as possible be omitted from the meetings.

The annual report of the secretary was read by the secretary.

The annual report of the treasury was read by Joseph E. Jack.

Report of the proceedings of the House of Delegates of the Utah State Medical Association at their annual session of 1927 was read by Sol G. Kahn.

The following committees reported: Community Clinic by W. L. Rich; Public Health and Legislation by C. M. Benedict; Necrology by J. U. Giesy; Committee to Supervise Public Lectures, read by the secretary in the absence of Ralph Pendleton; Medico-Legal by M. C. Lindem; Library by W. R. Tyndale; Boy Scout by L. J. Paul.

L. J. Paul discussed W. L. Rich's report.

F. B. Steele moved that all committee reports be adopted as read. Seconded and carried.

Election of officers for 1928 resulted in the unanimous election of the following men: W. F. Beer,

president; C. M. Benedict, vice-president; M. M. Critchlow, secretary; Joseph E. Jack, treasurer; W. G. Schulte, censor.

W. G. Schulte delegated A. J. Hosmer and W. L. Rich to escort President Beer to the chair.

President Beer responded with a short speech.

Adjournment at 10:30 p. m.

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The regular meeting of the Salt Lake County Medical Society was held in the assembly room of the Medical Arts Building, Salt Lake City, January 9, 1928.

Meeting called to order at 8:05 p. m. by President William F. Beer. Forty-one members and one visitor were present.

Minutes of the previous meeting were read and accepted without correction.

The first paper on the scientific program was by W. E. Hunter on "Diaphragmatic Hernia." He reported three cases, two of which were congenital with rudimentary lungs, and one was traumatic. He discussed the causes and went into the embryology. Pictures and films were shown by L. A. Thody and discussed by G. B. Coray.

This very interesting paper was brilliantly discussed by George W. Middleton, who dealt on the embryology, anatomy, symptoms and treatment. There was further discussion by R. T. Richards, who reported a case of sarcoma of the lung which he removed and repaired the diaphragm with latissimus dorsi muscle.

The next paper was given by J. P. Kerby on "Eventration of the Diaphragm." He took up the literature on this subject and discussed the causes, illustrating his paper with films. This interesting paper was discussed by W. E. Hunter and G. B. Coray.

G. G. Richards announced the meeting of the American College of Physicians, March 5 to 9, at New Orleans.

President Beer announced the policy of the society during his incumbency and read the names of the personnel on the various committees he had appointed.

J. P. Kerby requested that every doctor threatened with malpractice suit or asked to testify in such a suit confer at once with the Medico-Legal Committee.

Adjournment at 9:30 p. m.

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The regular meeting of the Salt Lake County Medical Society was held in the assembly room of the Medical Arts Building, Monday, January 23, 1928.

Meeting called to order at 8:10 p. m. by President William F. Beer. Twenty-eight members and two visitors were present.

Minutes of the previous meeting were read and accepted without correction.

No clinical cases were presented.

F. B. Bailey read a paper on "Pneumonia." He discussed the various types, immunity, instances, diagnosis, prognosis and treatment by drugs and sera.

This very interesting paper was discussed by George F. Roberts, G. G. Richards, G. N. Curtis, L. N. Ossman, and S. C. Baldwin.

C. J. Pearsall was unable to read his paper on "Syphilis" because of illness.

Applications for membership signed by C. E. McDermid, W. J. Reichmann, and William R. Middlemiss were read.

Adjournment at 9:30 p. m.

M. M. Critchlow, *Secretary.*

UTAH COUNTY

The Utah County Medical Society has had several interesting meetings during the interval since December.

January 11, Dr. Martin C. Lindem of Salt Lake read a very instructive paper on "Back Injuries" supplemented by x-ray plates.

January 25, Dr. J. L. Aird of Provo gave a "Review of Recent Medical Literature," and Dr. R. L. Hill of Logan discussed the "Physical Curd Character of Milk."

February 8, Dr. W. E. Hunter of Salt Lake read a paper on "Radiation in Gynecology," and Dr. W. R. Tyndale of Salt Lake discussed "Physical Therapy."

All meetings were held at the Hotel Roberts with a dinner preceding the scientific program, with the exception of the last, which was held at the Provo Physical Therapy Clinic, on the invitation of Dr. J. Nusink, who has recently established the clinic and who entertained the members of the local society on the night of February 8 as his guests.

Arnold E. Robison, *Secretary.*

WEBER COUNTY

The regular meeting of the Weber County Medical Society was held January 26, 1928, at the nurses' home, President W. R. Brown presiding.

At the suggestion of Dr. H. C. Stranquist a committee was appointed to audit the report of the treasurer for the last two years, Drs. E. P. Mills, Junior Rich, and A. H. Aland appointed on this committee.

Dr. W. H. Budge reported for the committee on "dead-beat accounts." He suggested that a list of names be formed each month by each doctor of "professional no-good accounts." This list will be mailed to an appointed secretary who will then make a complete list of the "dead-beats" for that month and mail a report of same to each doctor. That it be optional with the doctors about joining, and that a small fee be charged to cover the expense. Dr. A. H. Aland was appointed secretary for six months.

Dr. R. L. Draper's motion that a committee be appointed to draw up resolutions of sympathy for Dr. W. E. Whalen at the death of his father was passed. A copy of the same to be mailed to Doctor Whalen. The Chair appointed Drs. E. I. Rich and R. L. Draper on this committee. After some discussion it was the opinion of the society that the classification of diseases at the hospital be left to the executive staff of the Thomas Dee Memorial Hospital.

Dr. L. A. Smith gave a very interesting paper on "Nephritis in Children," classifying the disease, etiology and treatment. The acute hemorrhagic and acute and chronic parenchymatous are the two most common in children. He showed some interesting charts of changes noticed in the capillary nail bed that are associated with these two types of nephritis. The paper was discussed by Drs. W. H. Budge, A. H. Aland, and R. L. Draper.

Meeting adjourned.

George M. Teater, *Secretary.*

NEWS

The January meeting of the Holy Cross Hospital Clinical Association was held the night of January 16, in the assembly room of the hospital. The following program was rendered:

Carcinoma of Bladder, with Case Report—Dr. W. G. Schulte.

Hemorrhagic Kidney—Dr. C. J. Albaugh.

Case Report—Dr. C. Klein.

Pathological Specimens (exhibit)—Dr. T. A. Flood.

Several applications for membership in the Association were received by the secretary.

MISCELLANY

From time to time in this department of California and Western Medicine, appear columns grouped under the following headings: Comment on Current and Recent Articles in this Journal; News; Medical Economics; Readers' Forum; California State Board of Health; and California Board of Medical Examiners. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

Reapportionment of Delegates to American Medical Association, 1928—The necessity of completed membership returns before April 1, 1928, is emphasized by the following letter from Dr. Olin West:

"Dear Doctor Pope: The last reapportionment of delegates was effected at the seventy-sixth annual session held at Atlantic City in 1925. Another reapportionment will therefore be made at the seventy-ninth annual session of the Association to be held in Minneapolis, June 11-15, 1928. As the reapportionment will be made on the basis of the membership in constituent associations *as that membership has been reported and recorded on the membership records of the American Medical Association on April 1, 1928,* it is important that this office shall have complete reports of the membership of your association so that the names of all members may be duly recorded in this office before April 1, 1928.

This matter is brought to your attention now in order that you may remind the secretaries of your component county medical societies of the need of the fullest possible reports of membership in their respective organizations.

Delegates already elected or to be elected for service in the House of Delegates for the seventy-ninth annual session of the American Medical Association in June, 1928, will be in no way affected by the reapportionment to be made in Minneapolis.

On January 1, 1928, the membership of the American Medical Association, which of course is the combined membership of its constituent state and territorial associations, was 94,238. It is sincerely hoped that this splendid membership will be maintained and even increased by the affiliation of desirable and eligible physicians and that the membership in your state will be maintained at a figure that will insure that there will be no reduction of representation in the House of Delegates.

Very truly yours,

OLIN WEST,

Secretary American Medical Association."

The Clinical and Statistical Section of the Los Angeles County Medical Association has undertaken the publication of the "Daily Program" giving all operations and clinics held in the accredited hospitals of the city. All members of the Association and visiting physicians are invited to attend these clinics. Out-of-town visitors may secure information concerning each day's program through the office of the Clinical and Statistical Section of the Los Angeles County Medical Association, 412 West Sixth Street.

It is the ultimate object of the section to pay particular attention to the compilation of statistics by keeping an accurate report of operations and results.

The dates for the Lane Medical Lectures which are to be given by Dr. F. d'Herelle, Directeur du Service Bacteriologique du Conseil Sanitaire, Maritime et Quarantinaire of Alexandria, Egypt, and discoverer of the bacteriophage phenomenon, have been tentatively fixed for the week commencing October 22, 1928. The subjects of the lectures will be as follows: Bacteriophagy; Bacterial Mutations; The Nature of the Bacteriophage; Infectious Diseases; The Phenomenon of Recovery.

In addition Doctor d'Herelle will give a general lecture at Stanford University on "Logic in Biological Researches."

Annual Meeting of the Northern California Association of Physiotherapists will be held at Sacramento, April 30, 1928, at 2:30 p. m., Room D, Auditorium.

Physiotherapy Procedures in the After Care of Cerebral Hemorrhage—Dr. William Bender, San Francisco.

Passive Motion: Its Place in the Treatment of Stiff Joints—Dr. E. W. Cleary, San Francisco. Discussion, Dr. J. Judson Sale, San Francisco.

Physiotherapy in Relation to Diseases of the Skin—Dr. H. E. Alderson, San Francisco.

The work of the State Department of Public Health in Infantile Paralysis—Demonstration by Miss Winifred Tougas, director.

Popular Lectures at Lane Hall—All interested are cordially invited to be present.

Friday evening, March 9, 1928, 8 p. m.: Protection against Tuberculosis—Dr. Frederick Eberson.

Friday evening, March 23, 1928, 8 p. m.: Prevention of Heart Disease—Dr. William Dock.

The thirteenth annual convention of the Catholic Hospital Association of the United States and Canada and the second annual Hospital Clinical Congress of North America will be held in the Cincinnati Music Hall, Cincinnati, Ohio, June 18 to 22, inclusive, 1928. The fourth annual convention of the International Guild of Nurses will be held at the same time, in the same building, at night meetings.

Outstanding authorities in medicine, surgery, pathology, nursing, dietetics and hospital administration, architecture and engineering, will lecture and demonstrate in specially planned clinics representing the various departments of the modern hospital. A professional program of the highest interest and value is now being formulated, and all persons interested in medical and hospital service are cordially invited to attend. Further information may be obtained from John R. Hughes, M. D., dean of the College of Hospital Administration, Marquette University, Milwaukee, Wisconsin, who is general chairman of the convention and congress.

Conference on Rheumatic Diseases to be held at Bath, May 10 and 11, 1928. President of the conference, Sir George Newman, K.C.B., Hon. D.C.L.; LL.D. M.D., F.R.C.P., D.P.H., Chief Medical Officer, Ministry of Health.

Sessions:

Social Aspects—The Right Hon. Lord Dawson of Penn, G.C.V.O., K.C.B., K.C.M.G., Hon. LL.D.;

M.D., F.R.C.P., physician to His Majesty the King, president.

Causation—Sir Humphry Rolleston, Bt., K.C.B., Hon. D.Sc., D.C.L., LL.D.; M. D., F.R.C.P., physician to His Majesty the King, Regius Professor of Physic, University of Cambridge, president.

Treatment—Sir E. Farquhar Buzzard, K.C.V.O., M.A., M.D., F.R.C.P., physician to His Majesty the King, Regius Professor of Medicine, University of Oxford, president.

Organizing Committee—F. G. Thomson, M.A., M.D., F.R.C.P., chairman; Rupert Waterhouse, M.D., M.R.C.P.; R. G. Gordon, M.D., D.Sc., F.R.C.P.E.; Vincent Coates, M.C., M.A., M.D., M.R.C.P., honorable medical secretary; John Hatton, honorable organizing secretary.

The Hebrew Physician (HaRofeh Holvree), the only medical journal published outside of Palestine which is written in Hebrew, has just made its initial appearance.

This journal is under the editorship of Doctor Moses Einhorn and Dr. A. Goldenstein. It contains articles on general medical subjects and has a special section devoted to new Hebrew medical terminology. All physicians who are interested in this journal are requested to communicate with the editors, addressing them care of The Hebrew Physician, 286 West Eighty-sixth Street, New York City.

Professor Julius Bauer, professor of medicine in the University of Vienna, and physician-in-chief to the polyclinic, is coming to this country under the auspices of the American College of Physicians, and will deliver several lectures and also the Convocation oration before that body at their next meeting in New Orleans, the 5th to the 9th of March.

He is well known to many American students because of his clinic on endocrinology, which is held in that hospital.

Professor Bauer is not only an interesting personality possessed of an encyclopedic type of mind, but he is also a great student, an admirable teacher, and a splendid lecturer, who speaks English fluently. His coming visit to this country should give many of our physicians an unusual opportunity to learn at first hand his now much-discussed ideas of constitutional pathology and the endocrine glands.

A Nation-Wide Campaign for the Early Diagnosis of Tuberculosis—The National Tuberculosis Association, with its fifteen hundred state and local affiliations, with the support of the American Medical Association and the American Public Health Association, is sponsoring an "Early Diagnosis of Tuberculosis" campaign during the month of March.

The aim of the campaign is twofold: first, to focus the attention of the public at large upon the danger signs of early tuberculosis, and to urge them to go to their doctor for an examination; and second, to stimulate renewed interest on the part of the medical profession in the recognition of early signs of tuberculosis.

The cooperation of every physician in the state is sought to encourage the physical examination of the apparently well during the month of March.

The California Tuberculosis Association, through its executive secretary, Edith Tate Thompson, is prepared to supply upon request very striking public health bulletins and literature on the subject of the importance of physical examination and early diagnosis. This organization will also supply newspaper and other publicity mediums with plenty of material preceding and during the campaign.

Motion pictures for lay audiences entitled "Let Your Doctor Decide," and another for medical groups entitled "The Doctor Decides," will be used throughout the state. Speakers for county medical societies will be supplied on request.

TWENTY-FIVE YEARS AGO *

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Volume 1, No. 5, March, 1903

From some editorial notes:

. . . The attention of the members of the State Society is directed to the announcements printed elsewhere concerning the annual meeting to be held in April at Santa Barbara. . . .

. . . As the membership of the State Society now is over one thousand, with some County Society additions to be made between this time and the meeting, the thirty-third annual meeting will bring together representatives from every part of the state, and the exchange of fraternal greetings by members of the profession living in this great empire of California can only be productive of good. . . .

. . . Thieves, scoundrels and patent-medicine fakers have long appreciated the advantage accruing from the association of common interests; but honest men seem as yet to realize it only to a limited degree and trifling extent. . . .

. . . For many years the Register of Physicians in California, formerly published by the secretary of the Board of Examiners, has been a very useful volume. The changes in the state law, together with the retirement of the former secretary, have resulted in the abandonment of the publication of this volume by the Board of Examiners. . . .

. . . It seems to resolve itself into a choice whether it is better to have some money lying idle in the bank or to do something worth the doing, that will be for the benefit of the membership and the profession at large. . . .

. . . In April, 1902, the State Society was reorganized on the plan of county society membership requirement for eligibility to membership in the State Society. . . .

. . . The members of the State Society should certainly take much credit to themselves for their action in recommending that the annual volume of Transactions be abolished and that a journal be substituted. Certainly very few people ever look into an annual volume of transactions, and while some may not study the pages of a journal, or look at it after its volumes are completed, their attention is called to its existence and to the vitality of the society publishing it, at least twelve times each year. . . .

. . . Every physician either is or is not honest and honorable and ethical, so far as the practice of his profession is concerned. If he is honest and honorable in his professional work he should be a member of his local and state society; if he is not, he should not be permitted to join such societies nor to retain his membership in them if he has already joined. . . .

. . . A special committee to investigate thoroughly the proposed plan of the National Bureau of Medicines and Foods (as published elsewhere in this issue), and to report to the House of Delegates at the New Orleans meeting of the American Medical Association, has been appointed by the president, Dr. Frank Billings. . . .

. . . Three bills were presented at the late session of the legislature, the purposes of which were to change, in various particulars, the provisions of the existing law regulating the practice of medicine and

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* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

surgery in this state. One of these bills was not reported back from committee, one was withdrawn, and the other was defeated by vote in the senate, where it originated. . . .

From the minutes of the Sacramento Society:

. . . At the regular meeting of the Sacramento Society for Medical Improvement, held at the office of Dr. W. A. Briggs, on Tuesday evening, March 17, Dr. T. W. Huntington read a paper on "Operative Treatment of Fracture of the Patella." . . .

From a special article by Dr. Emmet Rixford:

. . . Doctor Rixford presented a case of congenital luxation of the hip, showing the final result of Lorenz' operation, performed three years ago, giving the following clinical history: . . .

From a special article by Dudley Tait, M. D., entitled "Treatment of Hydrocele by Eversion of the Tunica Vaginalis (Longuet's Method)." The opening paragraph reads as follows:

. . . Sound therapy is contingent upon precision in diagnosis. A judicious surgical intervention should be preceded by or lead to a positive knowledge of the pathologic conditions present. Hence, the rapid and well-nigh total abandonment, in all branches of surgery, of blind methods of treatment and their supplantation by open procedures. Hydrocele was one of the last ramparts to capitulate, leaving perhaps in its train a few timid camp followers, inert slaves of habit. . . .

From an article on society organization:

. . . Affiliation of county societies continues. Since the last number of the journal was issued the following-named societies have become members of the State Society: Santa Barbara, Placer, San Joaquin, San Diego, Marin, Humboldt, Orange, and Alameda. . . .

From an article entitled "Conservatism in Gynecological Surgery," by Dr. W. F. B. Wakefield, professor of gynecology, Oakland College of Medicine and Surgery. The opening paragraph is as follows:

. . . Desiring to know the general trend of surgical opinion regarding this important subject, I have written to about one hundred of the leading gynecologists of this county, and have been favored with replies from a great many of them, for the courtesy of which I take this opportunity to thank them. . . .

From the correspondence column a letter from T. B. Crothers of Hartford, Connecticut, reads as follows:

. . . Editor California State Journal of Medicine—Dear Sir: Three times during the last half-century medical manifestos have been issued giving the opinion of physicians on alcohol. The first was issued in 1839, and was signed by eighty-six persons. The second in 1847, and was signed by two thousand physicians, and the third appeared in 1871, with the signatures of over four thousand physicians, including the names of many leading physicians in all parts of the world. A fourth declaration of opinions is now being circulated for signatures, and reads as follows: . . .

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. Pinkham, M. D.
Secretary of the Board

News Items, March, 1928

Dr. C. E. Camp, 62-year-old San Pablo physician, who admitted misconduct with a half-dozen San Pablo girls, was this morning sentenced to an indeterminate term of from one to fifty years in San Quentin penitentiary by Superior Judge A. B. McKenzie and was taken immediately to the prison.—*Martinez Standard,* January 28, 1928.

According to newspaper reports, Percy Purviance, owner of the Berkeley Chiropractic College, 2168 Shattuck Avenue, Berkeley, has again entered suit, this time asking for an injunction restraining appointment of members to the Board of Chiropractic Examiners. (Previous entries, December, 1925; January, February, June, July, September, and October, 1926; February, 1927.)

Charles L. Conte, a broker with offices in the Gillette Building, 830 Market Street, was arrested early today by Detective Lieutenant Charles Dullea of the Homicide Squad on charges of having violated the Medical Practice Act and having performed a criminal operation on 17-year-old Yvonne Evans, Apartment 1, 2306 Union Street.—*San Francisco Daily News,* January 19, 1928.

According to report, Chester C. Cook, D. C., licensed chiropractor, Watsonville, recently pleaded guilty to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of $600 and serve 180 days in the county jail, sentence being suspended on condition that he hereafter obey the law. "One of his advertisements reads, 'Bachelor of Iridiagnosis, Kritzer School, Doctor of Chiropractic, A. U.N. C. C., Philosopher of Chiropractic, National College, Master of Chiropractic, C. R. S., Ex-president Chiropractic Research Society of Chicago, Licentiate of Tennessee and California. Positively no Palmer methods used.'" (Previous entry, March, 1927.)

Despite his appearance in court dressed in full purple robes of a bishop of his church (Church of Psychosophy), Edwin R. Cook yesterday was found guilty of second degree murder in connection with the death of Mrs. Elizabeth Buckles after an illegal operation. . . . In his testimony Cook tried to shift blame for the woman's death to the shoulders of 'Dr.' Irving Cole, in whose office Mrs. Buckles was found dead last December 21.—*San Francisco Examiner,* February 11, 1928.

A blow would be struck at diploma mills purporting to confer academic, professional or other technical degrees by mail without adequate residence work in the institution by a bill introduced in the Senate by Senator Copeland (Democrat), New York. It provides that nothing shall pass through the mails leading up to or concerning the conferring of such degrees unless the institution or corporation granting or conferring any such degree shall, before the same is

granted or conferred, prescribe and require of each and every student or other person applying therefor, or proposing to receive such a degree, at least 180 days of actual residence and study at the principal place of business and situs of such institution, in fulfillment of conditions and in preparation for receiving such degree.—*Denver, Colorado, Post,* February 5, 1928.

According to reports, Corbin Dunne of Los Angeles on February 1 pleaded guilty to a charge of violation of the Medical Practice Act and was sentenced to spend sixty days in the county jail, said sentence being suspended for one year.

According to an Associated Press dispatch dated Vienna, January 21, 1928, published in the San Francisco *Bulletin* of the same date, "Medical science has not yet achieved the real regeneration of man, in the opinion of a group of research workers, who spoke at a meeting here attended by about one thousand of Austria's leading surgeons and physiologists. A majority of those reporting declared that the word 'rejuvenation' was a misnomer and that the best that could be said for the gland transplantation operation devised by Dr. Sergei Veronoff was that it afforded transient regeneration. Commenting editorially, the *Bulletin* concludes that, considering Doctor Hoffmeister's study of the Veronoff method of monkey gland transplantation, Hoffmeister's conclusions should serve as a warning to consult the family physician before submitting to any treatment that promises to perform a miracle."

C. J. Jeffers, Los Angeles, is reported to have pleaded guilty on January 25 to a charge of violation of the Medical Practice Act and was sentenced to pay a fine of $100 and serve six months in jail, the fine being paid and jail sentence suspended for two years, on condition that he does not violate the law during that time.

According to press dispatch from Seattle, February 14, printed in the San Francisco *Call* of the same date, Dr. William K. McKibbon, executive secretary of the White Cross, was preparing an appeal to United States Senator Wesley L. Jones for a congressional investigation of the alleged narcotic evil in McNeil Island penitentiary. "Doctor McKibbon declared that the traffic in dope is so widespread within the prison walls that nothing short of an investigation by Congress would produce results. Official guards, trusties and confidential prison employees are among the chief vendors, he alleges. 'I do not believe, however,' the White Cross secretary said, 'that Warden Finch R. Archer himself is cognizant of the extent of the traffic that goes on under his nose. The experience in other prisons, notably Atlanta and Leavenworth, goes to prove that the dope traffic is most insidious and that prison wardens are powerless to stop it.' "

Julio Mancillas, Los Angeles, on January 19, 1928, pleaded guilty to a charge of violation of the Medical Practice Act and was sentenced to one hundred days in the county jail. The records show Mancillas to be an old offender, apparently not at all impressed by a suspended jail sentence given him some time ago. (Previous mention, "News Items," September, 1926.)

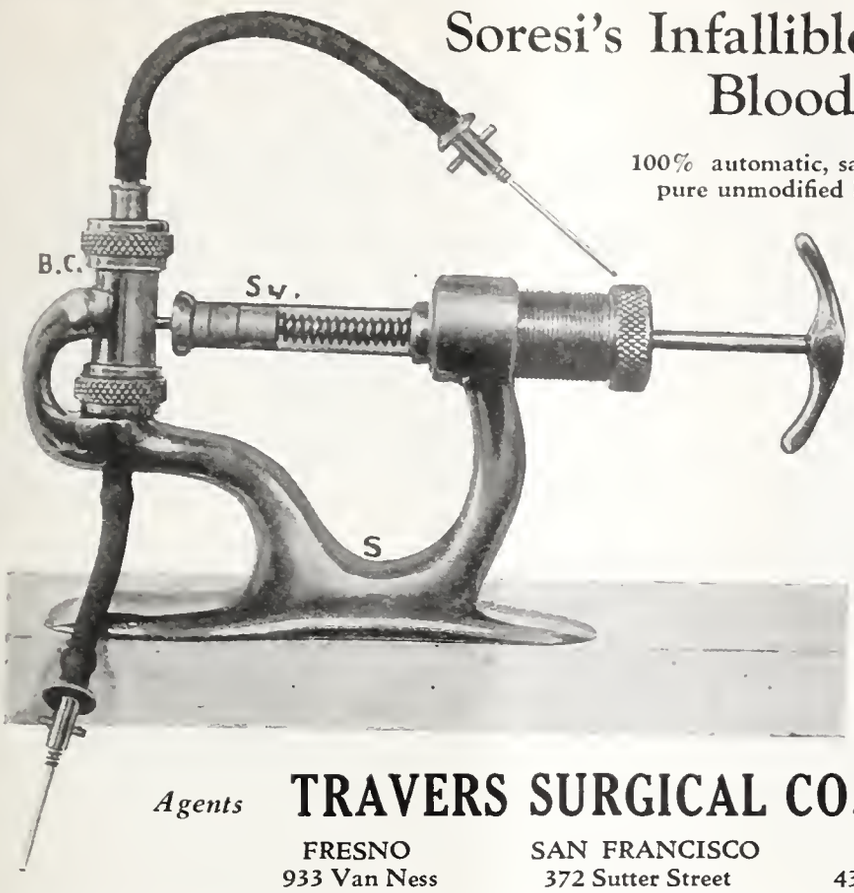
According to the San Francisco *Examiner* of February 16, 1928, " 'Dr.' Orlando Edgar Miller, San Francisco apostle of health, yesterday expressed his desire to return here and fight the list of charges that survive his Rellimeo Film Corporation. . . . He is charged with using the mails to defraud, embezzlement, grand larceny, and violation of the State Securities Act. . . . Federal authorities declare that at least two East Bay women victims have been defrauded through Miller's scheme to uplift the movie industry through the defunct Rellimeo Film Company. . . . Miller ascribed his troubles to the American Medical Association, which he said had 'constantly persecuted me because of my theories on health.' " (Previous entries, June, October, November, 1926; March, 1927.) (Nostrums and Quackery, first edition, p. 115; second edition, p. 40.)

Dissatisfied by the failure of operatives of the District Attorney's office to serve a warrant issued for Deputy District Attorney Louis M. Powell, Superior Judge Charles S. Burnell issued a second bench warrant yesterday and turned it over to the sheriff's office. Powell is sought for having abandoned the prosecution of Dr. Charles O. Mount, charged with murder and convicted of manslaughter. . . . Powell introduced the prosecution's evidence January 30 and then disappeared. When he failed to appear the next day an adjournment was ordered and the case continued. February 1, Powell was still absent, and Deputy District Attorney Clifford Crail was assigned to continue the prosecution. Judge Burnell ordered Court Clerk E. E. Ekdale to issue a bench warrant for Powell, and the warrant was turned over to two operatives of the District Attorney's office. When Judge Burnell learned yesterday that, after a search of more than a week, the District Attorney's operatives had failed to locate Powell, the jurist issued a new warrant to be served by deputies from the sheriff's office.—*Los Angeles Illustrated Daily News,* February 10, 1928.

Dr. C. H. Rice, a graduate of the University of Minnesota and recently a practicing physician in San Francisco, has been named resident surgeon of the Oakland Emergency Hospital. . . .—*Oakland Tribune,* February 7, 1928.

"Found guilty of violating the California Chiropractic Act, which prohibits a licensed chiropractor from using the title of 'Dr.' without specifying 'Doctor of Chiropractic.' J. Douglas Thompson, 1624 Franklin Street, was fined $50 recently by Police Judge Edward J. Tyrrell. Thompson, arrested on complaint of George M. Wynn, inspector of the State Chiropractic Board, gave notice he would appeal to the Superior Court." It is reported that J. Douglas Thompson formerly broadcast health talks over KTAB, Oakland, on Tuesday evenings.

Brought back here from his mother's home in Buffalo, New York, after a 4000-mile flight, Charles van Dickeson, alias "Dr." Irwin A. Cole, today was held in the Oakland city prison in connection with the death a month ago of Mrs. Betty Buckles, 22, victim of an illegal operation. He has confessed, according to the police, and is expected to plead guilty to a charge of second degree murder. . . . The fake physician admitted, police said, having made Josephine Risius, his nurse, victim of a fake marriage last year. . . . Dickeson, army deserter and former convict, was one time office manager for an Oakland physician and obtained his inspiration at that time for enacting the rôle of a doctor. He declared that Bishop Cook performed several operations for him. He said he himself performed two, both successful.—*San Francisco Bulletin,* January 23, 1928. (Previous entry, February, 1928.)



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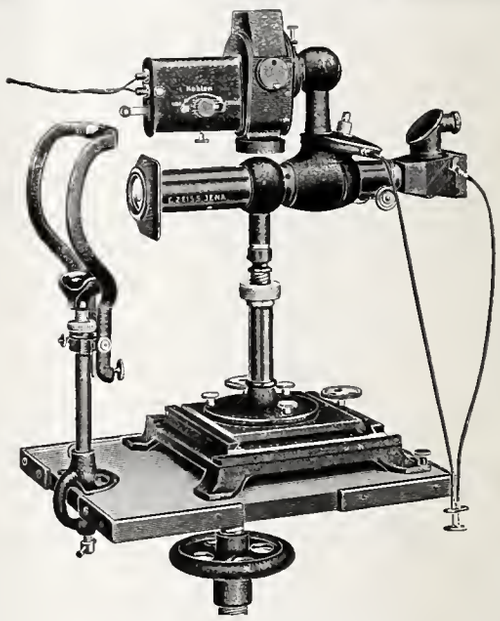

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TRUTH ABOUT MEDICINES

(Continued from Page 318)

uct, as prepared at the serum division of the Pasteur Institute by Doctor Ramon himself, has been successfully employed in immunization against diphtheria in France and other countries. No information is at hand as to the efficacy and safety of commercial preparations of diphtheria toxoid made in this country. The Council on Pharmacy and Chemistry of the American Medical Association has not accepted any of these preparations for inclusion in New and Nonofficial Remedies.—*Jour. A. M. A.*, January 14, 1928, p. 139.

Erusticator—The A. M. A. Chemical Laboratory reports on the composition of a poisonous rust remover. A physician had reported the death of a baby who died ten minutes after biting into a tube of "Erusticator." The product is put out by the Sterling Products Company of Easton, Pennsylvania. It was not labeled "Poison." Analysis showed that the preparation was essentially an aqueous solution of a mixture of ammonium and hydrogen fluorids (generally designated as ammonium bifluorid) equivalent to 26.3 per cent ammonium fluorid, and 16.9 per cent hydrogen fluorid. The sale of such poison without fair warning to the consuming public is to be deprecated. —*Jour. A. M. A.*, January 21, 1928, p. 205.

Solvo Aspirin not Acceptable for N. N. R.—Solvo Aspirin (Ess & Arch Co., Philadelphia), bears the declaration on the label that "Each teaspoonful contains five grains of aspirin in a soluble and convenient form with other suitable ingredients." In the information sent the Council on Pharmacy and Chemistry the following statement of composition was offered: "Solvo Aspirin is a solution containing five grains of Aspirin (Acetylsalicylic Acid) to each fluid dram, in a soluble form free from all precipitates combined with Glycerin, Elixir Aromatic, Distilled Water, and

(Continued on Page 402)

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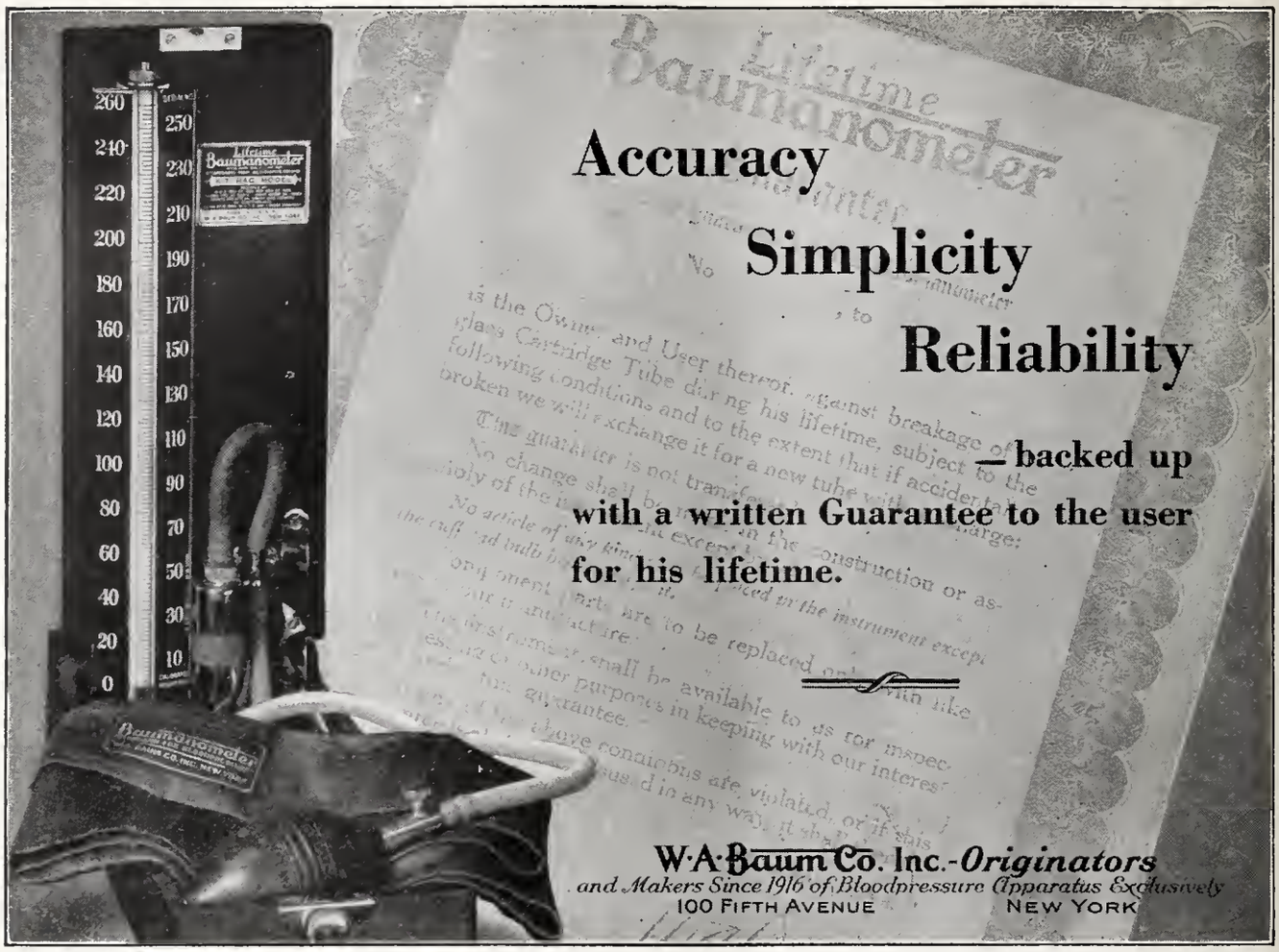

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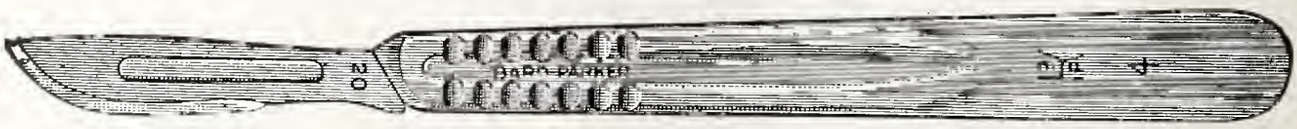

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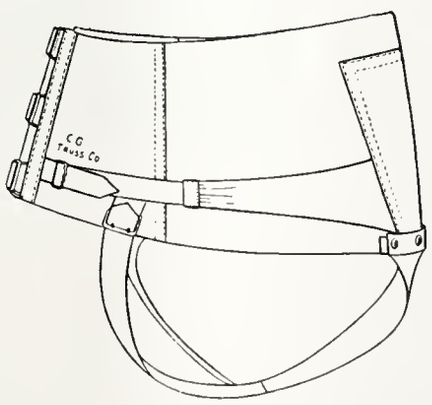

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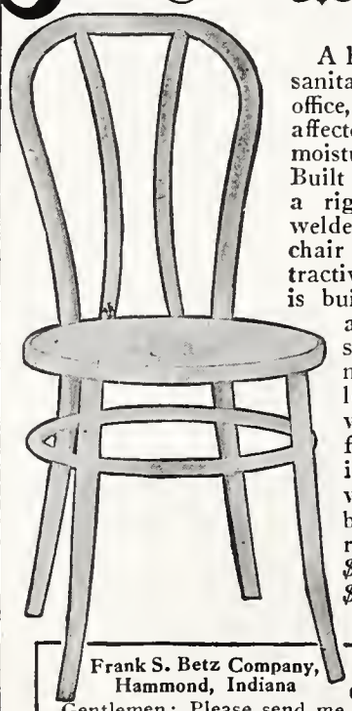

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TRUTH ABOUT MEDICINES

(Continued from Page 395

Tincture Cudbear." In another communication the preparation was declared to contain, in addition, two grains of sodium bicarbonate to each teaspoonful. The Council reports that from the information it is evident that the preparation is one in which the attempt is made to make acetylsalicylic acid more soluble by addition of sodium bicarbonate, and this despite the fact that it is well known, that, in the presence of water, acetylsalicylic acid reacts with sodium bicarbonate to form sodium acetylsalicylate, which in turn is hydrolyzed to sodium acetate and sodium salicylate. In consonance with this the A. M. A. Chemical Laboratory reported that in a specimen submitted to examination the acetylsalicylic acid was largely, if not completely, decomposed into sodium salicylate and sodium acetate. The Council declared Solvo Aspirin unacceptable for New and Nonofficial Remedies because it is an unscientific mixture, marketed under a misleading name, with an incorrect statement of composition and with unwarranted claims.—*Jour. A. M. A.*, January 21, 1928, p. 205.

Laxative Action of Bran—Experiments on the laxative action of wheat bran showed that this was due to the crude fiber (cellulose) which it contains. This crude fiber was found to be feces-forming; it had the power of producing more than its own weight of feces. This presumably takes bran out of the category of drugs and properly relegates it to the kitchen. Indeed it has been suggested that only through use in the more palatable forms of cookery does bran really "cure" or take care of constipation. Even so, it has many limitations.—*Jour. A. M. A.*, January 21, 1928, p. 206.

Some Effects of Synthalin—Investigation by Blatherwick and his colleagues at the Santa Barbara Cottage Hospital in California demonstrated that synthalin administered by stomach tube failed to produce hypo-

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glycemia in rabbits. Subcutaneous and intravenous injections usually decreased the blood sugar. Acute nephritis is produced by parenteral administration. There is also injury of the liver, as shown by a decreased ability to deaminize subcutaneously injected glycin. Certainly caution should be exercised in the use of a drug showing such properties. Blatherwick points out that the hypoglycemia produced by synthalin may be due to a combination of at least two processes. One of these resembles the action of insulin and the other that of hydrazin. The latter substance appears to cause hypoglycemia by injuring the liver and thus preventing normal glyconeogenesis. Synthalin has apparently not yet met the prerequisites for rational use in the relief of diabetes.—*Jour. A. M. A.,* January 21, 1928, p. 209.

Effects of Spring Waters—The waters of Hot Springs, Virginia, are alkaline, earthy and sulphated, at temperature of from 108 to 112 F. Those of Hot Springs, Arkansas, are also alkaline and earthy, ranging in temperature from 76 to 148 F. The heat at which these waters are used is no doubt their most potent influence. These waters are radioactive, but a government expert after making an extensive survey of radioactive mineral waters concluded that up to this time it has not been shown that the small amounts of radioactivity found in natural waters have any effect on the medicinal value of the waters.—*Jour. A. M. A.,* January 21, 1928, p. 225.

Poison Gas Neutralizer — Reports from Brussels convey the information that large sums of money have been supplied by public subscriptions headed by the King to support investigation in the development of a poison gas neutralizer.

The work is being conducted in The National University.—*The Boston Medical and Surgical Journal.*

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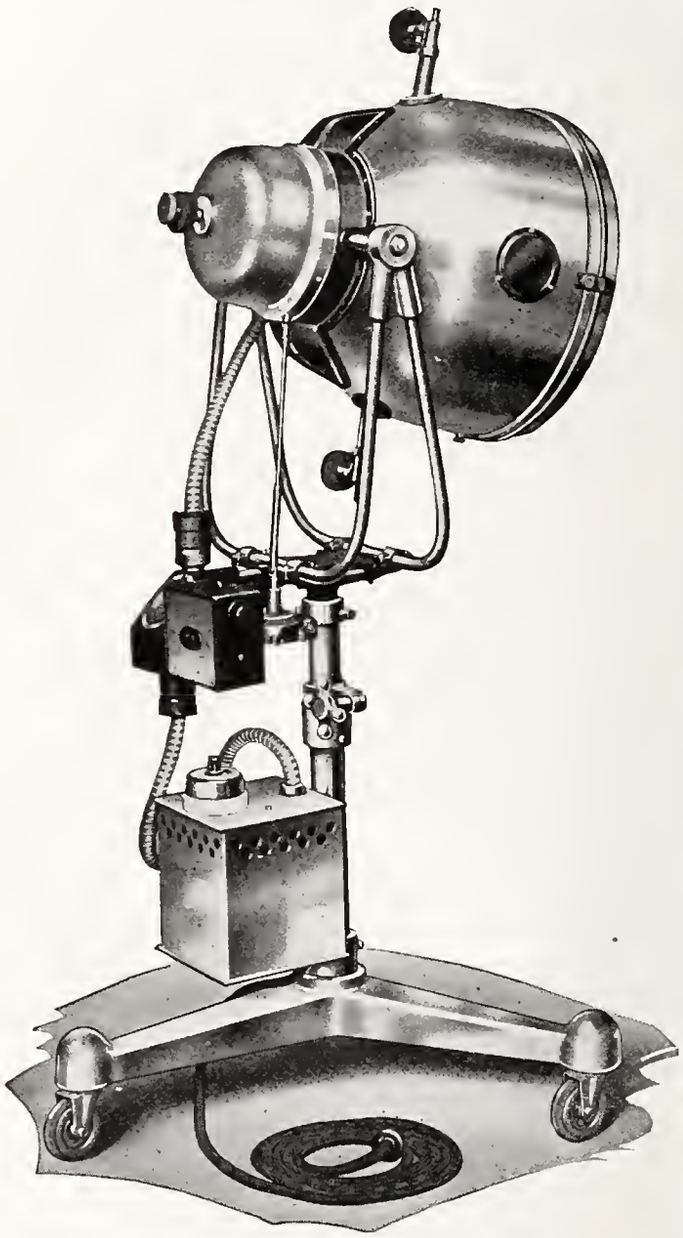

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Physicians who are interested in this subject matter will find it presented in a rational manner in a pamphlet entitled "*Constipation in Infancy*", a copy of which will be mailed promptly upon request.

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Council Passed—The notable success of many pharmaceutical products which have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in "New and Nonofficial Remedies" recommends not only the plan itself, but the wisdom of the medical profession in selecting these reliable "Council Passed" remedies for daily use.

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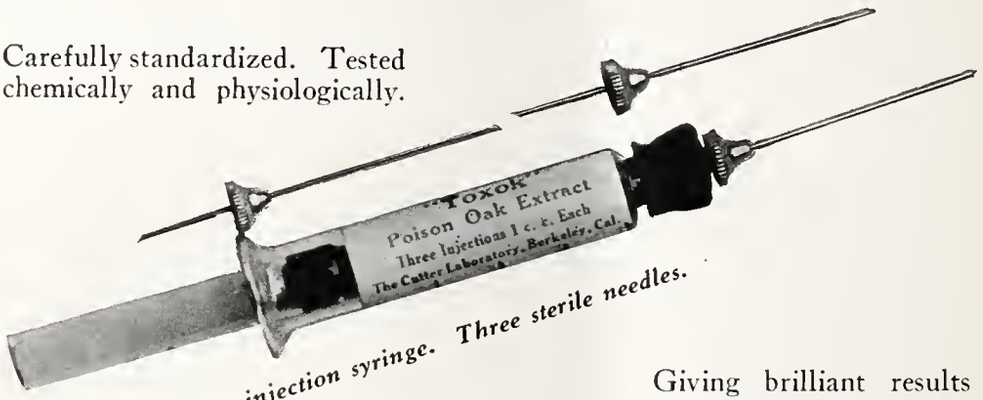

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The Prevention of the Introduction of Disease from Abroad—A striking report has recently been transmitted to Congress by Surgeon General H. S. Cumming of the Public Health Service in which it was shown that the past fiscal year was notable on account of the small numbers of quarantinable diseases that threatened our borders. No cases gained entrance to the country, although seventeen cases of smallpox, two cases of leprosy and two cases of human plague were apprehended at quarantine stations of the Public Health Service and detained. This fortunate situation was due not only to the system of control at domestic ports, but to the system of medical inspections maintained at certain foreign ports from which diseases are likely to spread on account either of the presence therein of quarantinable diseases or the volume of commerce emanating therefrom.

At domestic ports during the year, 20,284 vessels, 820,793 passengers and 1,140,922 seamen were inspected on arrival by quarantine officers; at insular ports of the United States 2991 vessels, 169,461 passengers and 226,373 seamen were inspected; at foreign ports 5954 vessels, 424,172 passengers and 272,873 seamen were inspected prior to embarking for the United States.—Report of United States Public Health Service.

Five "Don'ts" for Baby's Bath—Insure your baby against accidents which frequently occur during the morning bath by observing the following five rules:

1. Don't put the baby in tub before testing the water.
2. Don't add hot water to the bath while the baby is in the tub.
3. Don't wash the inside of the baby's mouth.
4. Don't leave the baby alone for a moment in the bath tub.
5. Don't let a draft blow on him while he is being bathed.—From *Children, The Magazine for Parents.*

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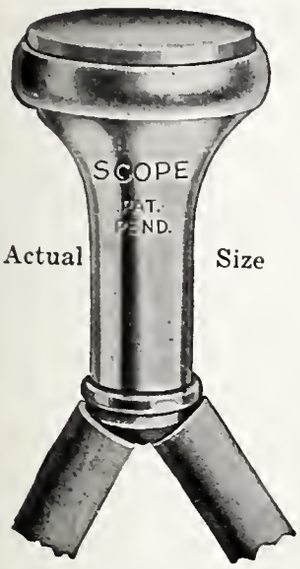

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Gift to University of California Made Because of Service—In recognition of medical service afforded her eight-year-old son some six years ago during a temporary financial crisis, a mother of San Francisco recently sent a check for $25 to the out-patient department of the University of California Hospital, together with a letter of thanks expressing the hope that the money would be spent to relieve some other boy in the same circumstances as her son had been.

The young boy in question was brought to the hospital by a physician connected with the staff, while suffering from a mastoid in his right ear. His mother at the time was seriously embarrassed for money to pay for an operation, so the boy was taken in through the provisions of state and private endowments for needy cases, and given care.

Since that time the mother has remarried and is once more comfortably situated, but as proof of the fact that she had not forgotten the service extended her she recently returned to the physician who attended her son, asked where she could extend a helping hand in return, and on his advice sent a check to Miss Rose Steinhart in charge of admissions at the University Clinic. The gift was acknowledged last week by the Board of Regents.

Auburn Has First Diphtheria Death in Nearly Four Years—Auburn's record of no deaths from diphtheria since March 9, 1924, was broken on January 9, by the death of a 6-year-old child. The report states that this child had not been immunized against diphtheria with toxin-antitoxin, that a physician was not called early in the disease, and that antitoxin was not given until two days after his first call. Two younger children in the family were given protective doses of antitoxin, but two older ones who had been immunized some time ago with toxin-antitoxin were not given any. All four remained well.

This is the second death from that cause since July 21, 1923.—*Health News.*

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Speed Versus Accuracy—"Researches in the learning field are beginning to appear which point to some of the educational expert's fallacies. Although he has been assuming that the way to get speed is to hold the stop watch on the child, he never had available conclusive scientific evidence in support of this assumption. On the contrary, there are now available scientific data which pretty clearly demonstrate its falsity." In substantiation of his claim, Doctor Myers relates the results of a study he has recently made of the subject. It was found, he said, that learning, when accuracy was emphasized, produced greater speed than when speed was emphasized. "The reason that our children work so slowly is because we try to make them work so fast. If emphasis is put upon accuracy and the learner has a comfortable atmosphere in which to work," Doctor Myers states, "speed is sure to follow. Then why all this human torture to the school child only to produce inferior learning products?"—National Committee for Mental Hygiene.

A New Preventive of Malaria—The malaria studies have demonstrated the possibility of airplane control by spreading larvicidal dust over otherwise inaccessible breeding areas, thus adding a new means of defense against malaria. The limitations of the method remain to be determined, and the end of the fiscal year found active experimentation for this purpose under way. The studies of screening of poorly constructed houses of a type prevalent in certain malarious regions was particularly opportune, and placed a valuable means of control at the disposal of those responsible for the sanitary rehabilitation of the flooded areas of the Mississippi Valley. Other studies of impounded waters, habits of mosquitoes, etc., were continued with satisfactory progress.—Report of United States Public Health Service.

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You appreciate, we are sure, that physicians, like other citizens, must pay their bills promptly. They can only do so, however, when their own clients in turn pay them promptly for such professional services as may have been rendered.

A check to cover your account, which is now considerably overdue, will be appreciated.

Final Notice

In practically all businesses the custom which is generally followed with overdue accounts is to send such to a collecting agency.

Our bookkeeper has nothing in the records of the office to show when you intend to pay the enclosed account. Perhaps the previous statements and reminders may have been overlooked or ignored.

Following the rule of this office, this overdue account will be sent to the collecting agency within ten days if arrangements for its settlement are not made prior to that time.

This collection bureau method is disagreeable to us; and we believe, also to you. By promptly sending your check all this can be avoided.

When an account is sent to the collecting agency that organization takes full charge of it thereafter.

IN THE "Miscellany" section of the September, 1927, issue of CALIFORNIA AND WESTERN MEDICINE, page 398, appeared an article relating to the "collection of fees." Following this publication, numerous orders for printing the series of gum stickers and notices as shown in the article were received by us. We therefore concluded to stock them.

Since first we put the series on the market as a stock item, the demand has grown so great that we have been compelled to print them in much larger quantities. This volume-printing has enabled us to produce them at a considerable reduction over the first printing and we are pleased to pass the saving on to the profession.

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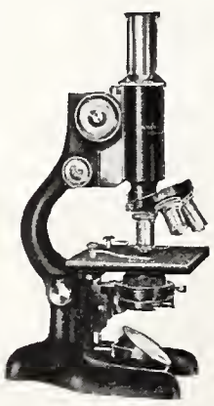

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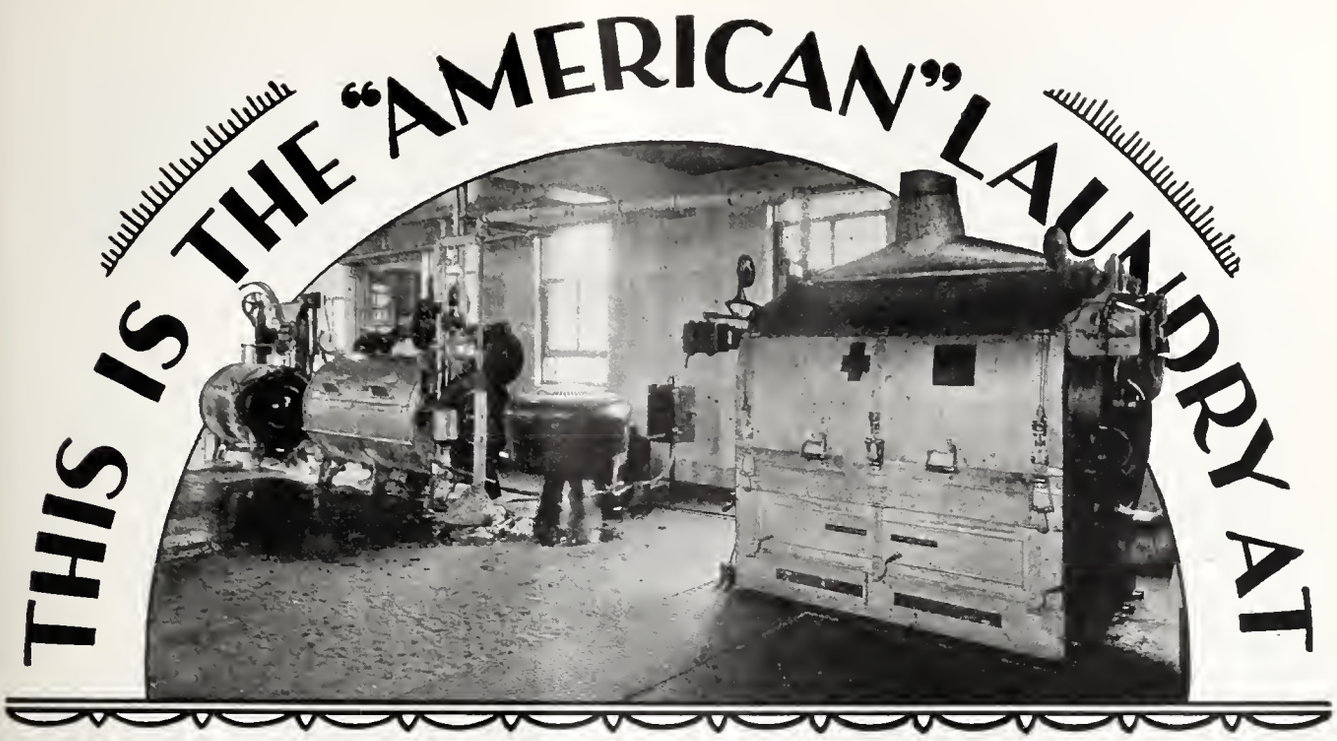

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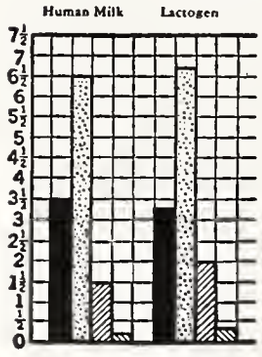

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Lead Poisoning in the United States—In an address before the Health Congress of the Royal Institute of Public Health at Ghent, Belgium, Dr. F. L. Hoffman reported that there had been a decline of 40 to 50 per cent in chronic lead poisoning in this country during the last decade.

More cases are observed among painters with an annual mortality of about seventy persons in the United States, while lead workers furnish very few deaths, and the printing trade not over five persons.

Nonfatal cases among storage battery workers are frequent, but few deaths from lead poisoning occur among these people.

Lead poisoning has occurred among persons who use snuff because lead pigment has been used to give color and weight. The Health Department of the city of New York has ordered this adulteration to be eliminated.

The reduction in the number of cases of lead poisoning is attributed to better living conditions and a decrease in the consumption of alcohol, shorter working hours and improved methods of personal hygiene.—*The Boston Medical and Surgical Journal.*

Dentists for Public Health—Surgeon General H. S. Cumming of the Public Health Service, in an address recently delivered before the First District Dental Society of the state of New York, urges dentists to recognize the opportunities for cooperation in public health measures. He stressed the fact that the relationship between local, and especially focal, infections and systemic diseases has definitely given dentistry a permanent place in medical practice and in public health matters.

Dentistry may very properly be considered as a specialty of medicine and may take its place as an adjunct in medical departments.—*The Boston Medical and Surgical Journal.*

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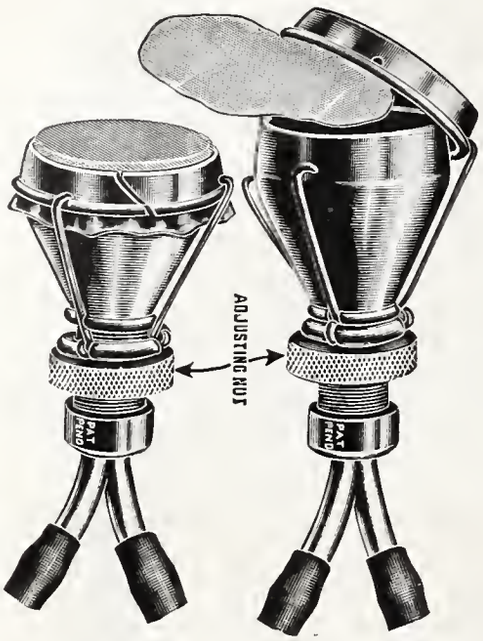

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The states of Connecticut and Massachusetts require thermometer manufacturers to be licensed, and test samples of the product from time to time. It was emphasized at the conference that other states are becoming the dumping ground for clinical thermometers that cannot be sold in these two states.

A committee was appointed to voice objection to two bills recently introduced into the U. S. Congress that would require the actual testing in Washington of every clinical thermometer sold. Opposition was on the basis that ample funds are not provided to carry out this legislation and that accordingly great delays would ensue to purchasers of clinical thermometers, with resultant increase in cost of the thermometer.—*The Boston Medical and Surgical Journal.*

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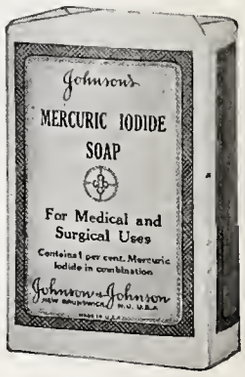

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Definition

" * * A clinical pathologic laboratory is an institution organized for the practical application of one or more of the fundamental sciences by the use of specialized apparatus, equipment and methods, for the purpose of ascertaining the presence, nature, source and progress of disease in the human body."*

"Only those clinical laboratories in which the space, equipment, finances, management, personnel and records are such as will insure honest, efficient and accurate work may expect to be listed as approved."

"The housing and equipment should be sufficient to permit all essential technical procedures to be properly carried out."

The Director

"The director of an approved clinical laboratory should be a graduate of an acceptable college or university of recognized standing, indicating proper educational attainments. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry or other allied subjects, for at least three years. He must be a man of good standing in his profession."

"The director shall be on full time, or have definite hours of attendance, devoting the major part of his time to the supervision of the laboratory work."

"The director may make diagnoses only when he is a licensed graduate of medicine, has specialized in clinical pathology for at least three years, is reasonably familiar with the manifestation of disease in the patient, and knows laboratory work sufficiently well to direct and supervise reports."

"The director may have assistants, responsible to him. All their reports, bacteriologic, hematologic, biochemical, serologic and pathologic should be made to the director."

Records

"Indexed records of all examinations should be kept. Every specimen submitted to the laboratory should have appended pertinent clinical data."

Publicity

"Publicity of an approved laboratory should be directed only to physicians either through bulletins or through recognized technical journals, and should be limited to statements of fact, as the name, address, telephone number, names and titles of the director, and other responsible personnel, fields of work covered, office hours, directions for sending specimens, etc., and should not contain misleading statements. Only the names of those rendering regular service to the laboratory should appear on letter-heads or other form of publicity."

Fees

" * * There should be no dividing of fees or rebating between the laboratory or its director and any physician, corporate body or group. * * *"*

The following laboratories in California are among those approved by the Council on Medical Education and Hospitals of the American Medical Association:

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Clinical Laboratory of Drs. Evans, Butka, and Pratt, 1052 W. Sixth St., Los Angeles, Calif.

Pasadena Clinical Laboratory, 65 N. Madison Ave., Pasadena, Calif. Gustav F. Ruediger, M. D., Director.

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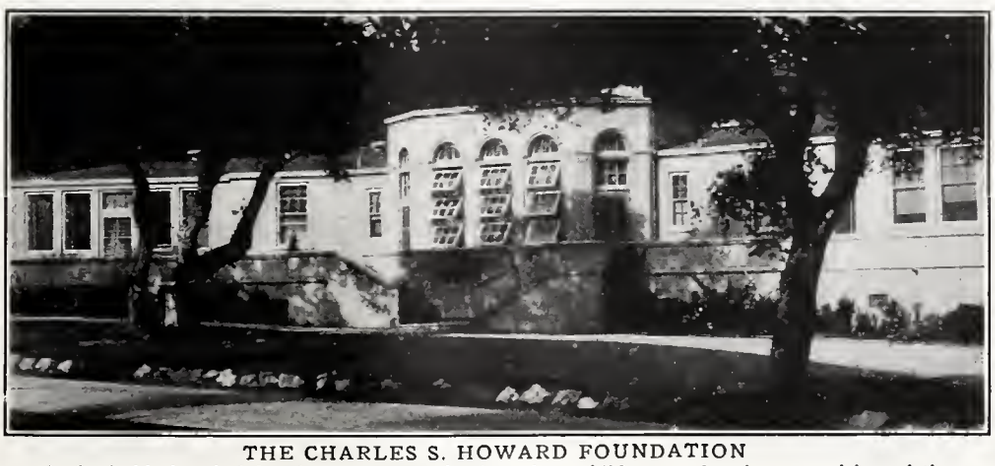

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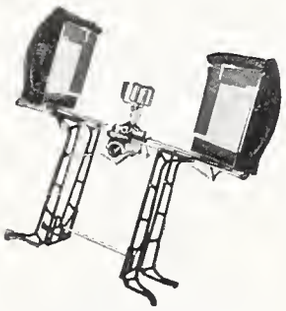

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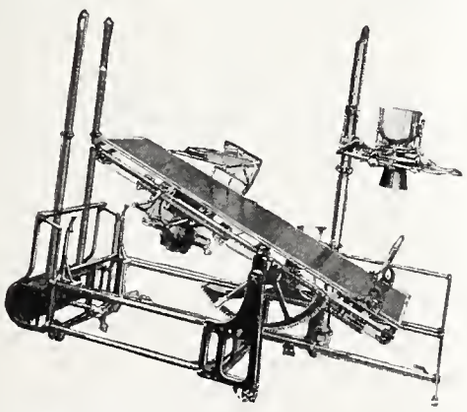

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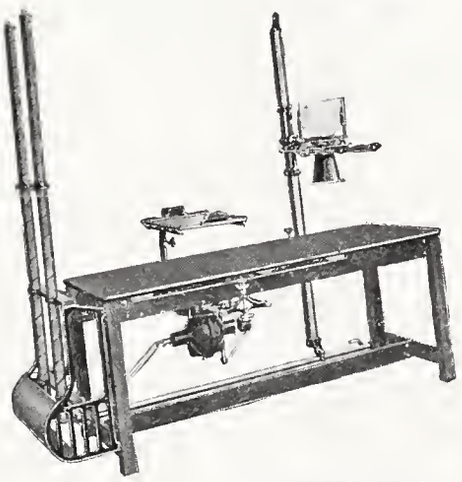

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(Continued on Page 438)

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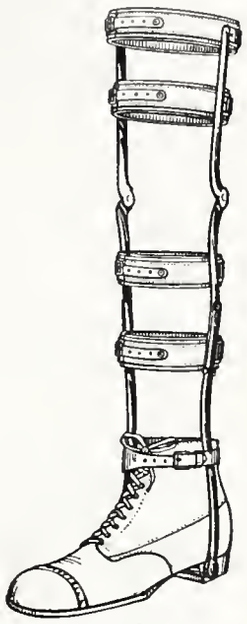

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CANYON SANATORIUM
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CHILDREN'S HOSPITAL
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COLFAX SCHOOL FOR THE TUBERCULOUS
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Colfax, Calif.

DANTE SANATORIUM
Limited General Hospital
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FRANKLIN HOSPITAL
Limited General Hospital
Fourteenth and Noe Streets, San Francisco

JOHNSTON-WICKETT CLINIC
Anaheim, Calif.

JOSLIN'S SANATORIUM
Nervous and Mental
Lincoln, Calif.

LAS ENCINAS SANITARIUM
Nervous and General Diseases
Las Encinas, Pasadena, Calif.

LIVERMORE SANITARIUM
Nervous and General Diseases
Livermore, Calif.

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ST. LUKE'S HOSPITAL
Limited General Hospital
27th and Valencia Streets, San Francisco

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General Hospital
2200 Hayes Street, San Francisco, Calif.

SUTTER HOSPITAL
General Hospital
28th and L Streets, Sacramento, Calif.

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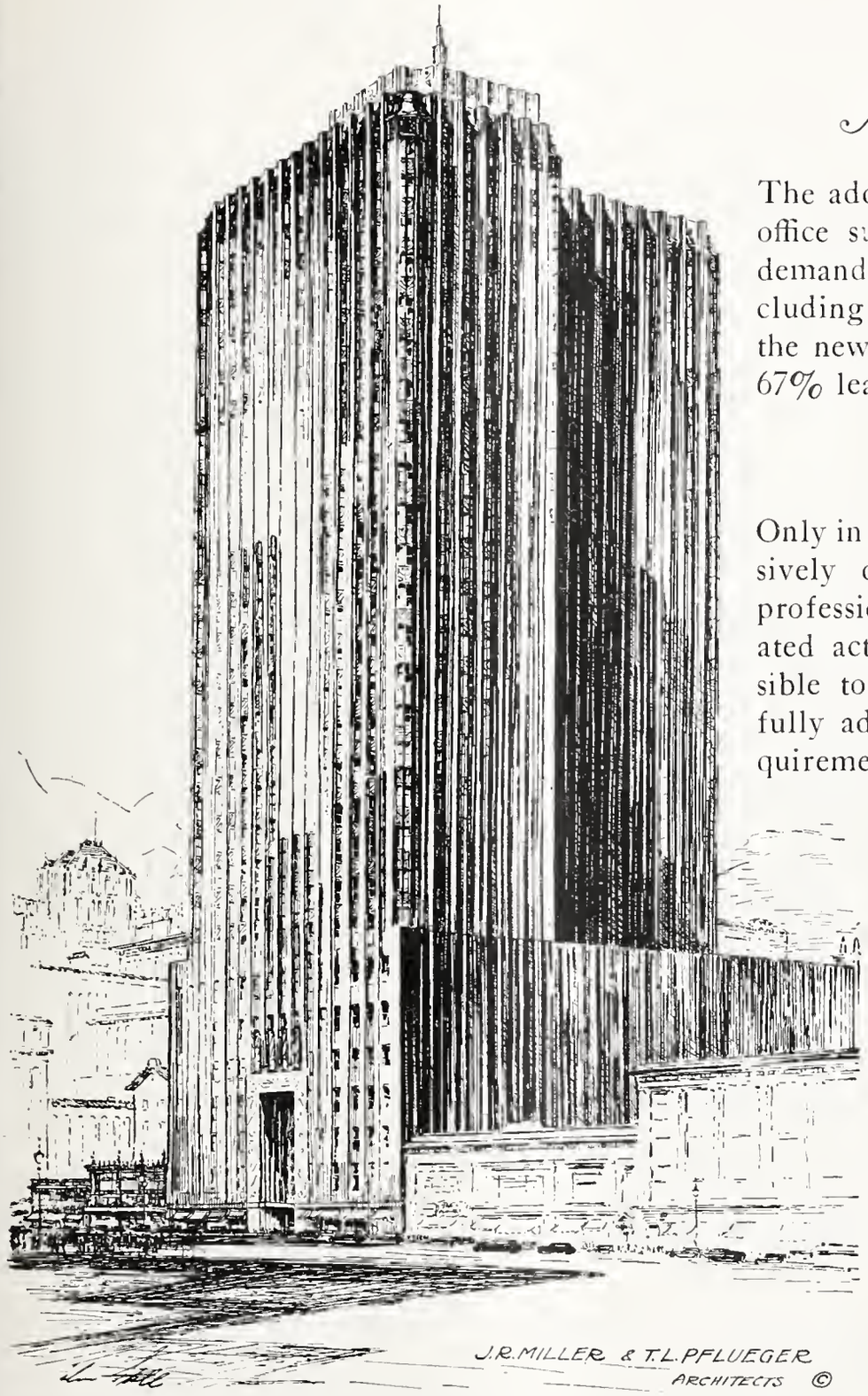

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Italy Is Investigating Infant Feeding—Prefects throughout Italy have been directed by the Minister of the Interior to obtain data on the prevalent methods of feeding infants. Physicians filling out certificates of infant deaths or of vaccination must report on the methods of feeding used for the child. Since vaccination is required by law within the first year of life, these combined reports should give data concerning the feeding of every infant born in Italy.—United States Department of Labor.

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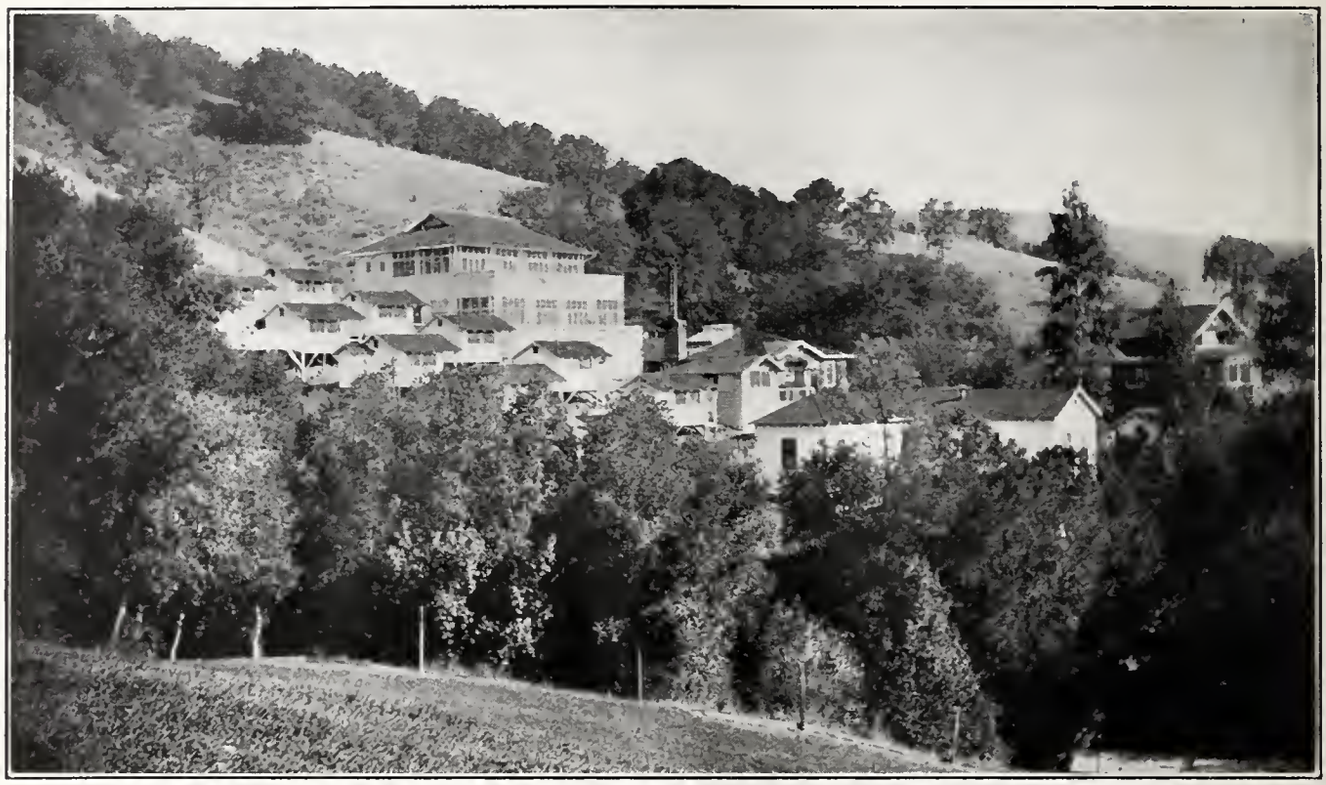

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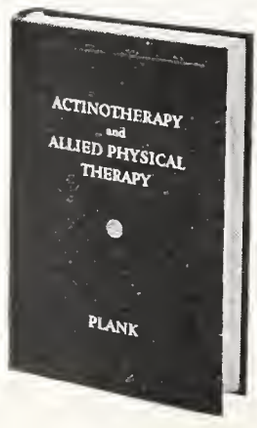

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The Human Body in Pictures. A visual text of anatomy, physiology, and embryology. Brooklyn: Physicians and Surgeons Book Company. 1927.

It is unfair to criticize this manual since it is a guide to motion-picture lectures portraying the main details of anatomy, physiology, and embryology. The reproduction of the motion pictures is, of course, unsatisfactory since the scale is necessarily so small. As an introductory course to nurses and undergraduate students it no doubt would be of value in inspiring interest and in clarifying some of the frequently misunderstood physiological functions. J. M. M.

A Textbook of Practical Therapeutics. With special reference to the application of remedial measures to disease and their employment upon a rational basis. By Hobart Amory Hare. Twentieth edition. Pp. 1094. Illustrated. Philadelphia and London: Lea and Febiger. 1927.

This latest edition of an excellent work is up to the standard of former editions. It contains reliable information of all the newer drugs such as ephedrin, novasurol, tryparsamid, ethylene, isacen, etc., as well as biologic products like pollens in diagnosis antiscarlatinal and antimeasles sera, parathormone, and intarvin.

The book is divided into four parts and well indexed, there being a special forty-seven page index of diseases and remedies in which one may find the various treatments for every human ailment alphabetically arranged from abortion to yaws. J. M. R.

The Religion Called Behaviorism. By Louis Berman. Pp. 153. New York: Boni and Liveright. 1927.

This collection of short essays is written by an author previously known for his somewhat sweeping views as to the importance of the endocrines in determining human psychological reactions. He has, however, not been neglectful of the trends of modern psychology on the more purely mental side, as the present work shows. A certain flippancy of style, indicating his refusal to be stampeded by the extreme claims of any school but his own, while possibly distasteful to more serious students, will make the book all the more readable for the majority.

The modern work in psychology should have a deep interest for any physician. This science is one which started building on the superstructure, so to speak, and has only recently been inquiring into the construction of the foundation. The modern schools have gone down to the most elementary principles, and with somewhat extreme enthusiasm propose to discard all the previous results. To use a different figure, it is as if we had been considering the philosophical concepts of a learned essay before even learning to read. The Behaviorists announce the startling discovery that this essay is made up of letters—r, p, q, etc.—and say there is "nothing but" letters in the whole essay. The next step is taken by the more recent Gestalt school who have discovered that the letters are grouped into words, and the whole essay contains "nothing but" words. Both schools are right, of course, as far as they go, and have performed a highly salutary service in calling attention to the elements out of which we must build our structure. Later, of course, others will discover that the words are grouped in sentences, the sentences in paragraphs, etc., and we shall eventually arrive again, with a better fundamental preparation, to take up the philosophical concepts of the essay.

One will get in agreeable form from this volume an understanding of the general principles at least of the two movements mentioned above. J. L. W.

Urography. By William F. Braasch. Second edition. Illustrated. Pp. 480. Philadelphia: W. B. Saunders Company. 1927. Price, $13.

The present edition of this standard work is revised and enlarged. The first edition appeared in 1915, and represented a pioneer effort in this field with the immense facilities of the Mayo Clinic at the author's disposal. This work is still the only treatise in the English language devoted to urography. The first edition appeared under the title of "Pyelography" at a time when roentgenography was limited in this field to the delineation of the renal pelvis. It was not long before the entire urinary tract, and even the seminal or genital tract, came to be outlined with the x-ray, hence the more comprehensive title "Urography" for the present edition. It is an excellent atlas of 759 roentgenograms illustrating practically every condition encountered in the urinary tract. The first edition contained 296 illustrations. A material improvement is noted in the quality of the roentgenograms in the present edition as compared with the former in which they often lacked detail and were not sufficiently characteristic.

The chapter dealing with the differentiation of pelvic dilatation due to mechanical obstruction and that due to inflammation is very instructive. The author expresses a sane view of ureteral stricture, and illustrates several fallacies associated with their diagnosis. However, he does not mention the fact that there are occasional patients who get relief from ureteral dilatation where

(Continued on next page)

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BOOK REVIEWS

(Continued from previous page)

there is no demonstrable urographic abnormality. Some phases of the subject are perhaps given rather cursory attention, and more consideration might well be given to such subjects as bilateral pyelography, pyeloscopy, the normal physiology of the urinary tract as revealed by urography, a systematic classification of anomalies with their urographic diagnosis, rupture of the kidney, and to the peculiarities of urography in infants and children with the special normal and abnormal conditions which characterize them. More emphasis could well be given to the proper preparation of the patient for urography, and its proper place in a routine plan of urological investigation. The importance of routine plain roentgenograms of the urinary tract prior to its delineation by opaque media is not sufficiently stressed. One can conceive of diagrams or sketches and abnormal conditions shown by the x-ray, such as Brodel made for Kelly and Burnam, which would clarify and emphasize the points the author is trying to bring out.

In spite of minor shortcomings which may be only intentional abbreviations on the part of the author, this book stands alone, and is an invaluable reference for the shelf of the urologist and roentgenologist alike.

T. E. G.

Bronchoscopy and Esophagoscopy. A manual of peroral and laryngeal surgery. By Chevalier Jackson. Second edition. Pp. 457. Illustrated. Philadelphia and London: W. B. Saunders Company. 1927. Price, $8.

Here we have a practical book covering the subject named from the standpoint of the author only. Those who follow other systems will find its usefulness decreased for this reason.

Over one hundred pages have been added to the first edition, but one finds no remarkable changes or additions. The section on gastroscopy is doubled without special improvement. A note in the introduction acknowledges the growing value of gastroscopy, but an insistence that the instrument be passed under ocular control throws out the really worthwhile gastroscopes.

There are some changes that are not improvements. The new illustrations of passage of the bronchoscope are inferior to the old ones in respect to clearness, and Figure 49 certainly gives an incorrect idea of the proper direction of insertion of bronchoscope. The pained expression on the patient's face seems well justified. Compare this to Figure 62 of the first edition.

The book remains a valuable manual of limited scope.

G. F. H.

The Foundation of Health. A manual of personal hygiene for students. By William Barnard Sharp. Second edition, thoroughly revised. Pp. 288. Illustrated. Philadelphia: Lea and Febiger. 1927.

The author states in his preface that the book is intended for use in the early college years. It consists of 275 pages with chapter and general bibliography and index. It deals in an elementary fashion with the physiology and more common disorders of the various systems of the body, and also with the various causes of disease and the principles of prevention and personal hygiene.

It is a general treatise which might well be placed in the hands of the intelligent layman, but is not sufficiently detailed or explicit for medical students or practitioners of medicine.

E. C. D.

Poliomyelitis. With special reference to the treatment. By W. Russell MacAusland. Pp. 402. Illustrated. Philadelphia: Lea and Febiger. 1927.

The increasing frequency of infantile paralysis in epidemic form with its large toll of permanent disabilities places it in the fore rank of important diseases. MacAusland's book is timely, as it takes in all phases of this subject. It is well written, readable, and has an excellent bibliography following each chapter. He gives a thorough up-to-date discourse on the history, epidemiology, etiology, symptomatology, classification of types, diagnosis, prognosis and treatment of anterior poliomyelitis. The author naturally favors the methods he has found most satisfactory; however, descriptions of other procedures are given and their selection left to the reader's discretion. It is questionable whether Whitman's astragelectomy is the operation of choice in the American clinic today. It is interesting that the author obtains so much success from stretching the tendon achilles and resorts so seldom to tenoplasty.

A critical review finds only a few statements relative to the anatomy which may be disputed such as, "In hypoglossal paralysis the tongue deviates to the sound side"; and the "attachment of the anterior tibial tendon into the scaphoid." There is an occasional pardonable interchange of abduction for adduction and two wrongly labeled illustrations. The planter wedge to correct cavus and the V wedge from the outer side of the astragulus

(Continued on Page 448)

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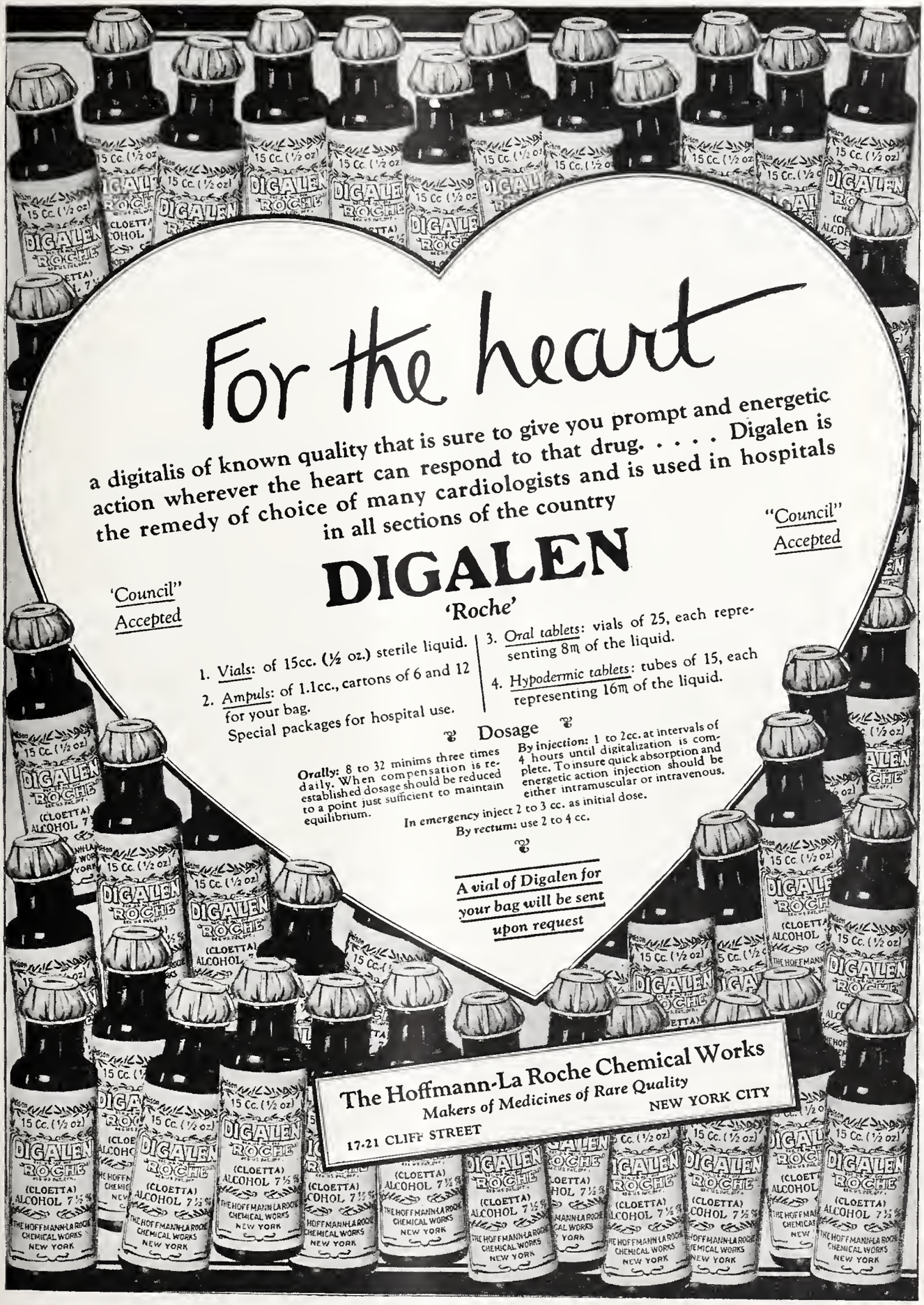
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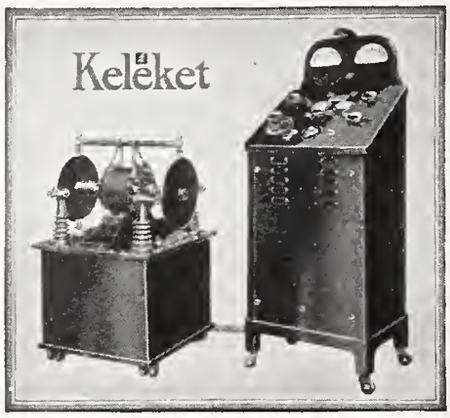

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BOOK REVIEWS

(Continued from Page
to correct varus do not appear to be based on good mechanical and anatomical facts.

Exception may be taken to the statement that an arthrodesis of the tarsal bones between the ages of eight and twelve years is not successful. A study of the roentgenograms following this operation will usually show a complete bony bridge between the bones and clinical examination will reveal firm union. The author states that the objection to Hoke's arthrodesis is inability to get good posterior displacement of the foot. If Hoke's operation is carefully done there is no doubt but that the foot can be displaced well posteriorly. It is doubtful whether arthrodesis of the ankle has a place in the surgery of this disease. The section on plaster is very meager and could be omitted. S. L. H.

BOOKS RECEIVED

The Mechanics of the Digestive Tract. An introduction to Gastro-Enterology. By Walter C. Alvarez, M. D. With one hundred illustrations. Second edition. Review copy by courtesy of the publishers, Paul B. Hoeber, Inc., New York.

Aluminum Compounds in Food. Including a Digest of the Report of the Referee Board of Scientific Experts on the Influence of Aluminum Compounds on the Nutrition and Health of Man. By Ernest Ellsworth Smith, M. D. Review copy by courtesy of the publishers, Paul B. Hoeber, Inc., New York.

Asthma. Its Diagnosis and Treatment. By William S. Thomas, M. D. Twenty lllustrations in black and white, and six in color. Review copy by courtesy of the publishers, Paul B. Hoeber, Inc., New York.

Local Anesthesia. A Short Course for Students and Surgeons. By Géza de Takáts, M. D., with a Foreword by Allen B. Kanavel, M. D. Illustrated. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

Pharmacotherapeutics. Materia Medica and Drug Action. By Solomon Solis-Cohen, M. D., and Thomas Stotesbury Githens, M. D. Review copy by courtesy of the publishers, D. Appleton and Company, New York.

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(Abstracts from reports of Council on Pharmacy and Chemistry, A. M. A.)

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In addition to the articles previously enumerated, the following have been accepted:

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(Continued from Page 448)

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Compound Syrup of Calcreose—A syrup containing in 100 cc. calcreose solution (New and Nonofficial Remedies, 1927, p. 123), 33.3 cc.; alcohol, 5 cc.; extractives from wild cherry, 4 grams (20 grains per fluidounce); chloroform, 0.6 cc. (3 minims per fluidounce); peppermint and other aromatic drugs. Maltbie Chemical Company, Newark, New Jersey.

Anterior Pituitary Desiccated (Lederle)—The anterior lobe of the pituitary gland of cattle, dried and powdered, without the addition of preservative or diluent. For a discussion of the actions, uses and dosage, see Pituitary Gland, New and Nonofficial Remedies, 1927, p. 285. The product is marketed in the form of tablets containing 2 and 5 grains respectively. Lederle Antitoxin Laboratories, New York.—*Jour. A. M. A.*, February 11, 1928, p. 463.

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Whole Pituitary Desiccated (Lederle)—The pituitary gland of cattle, including the infundibulum and the anterior and posterior lobes, dried and powdered,

(Continued on Page 450)

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TRUTH ABOUT MEDICINES

(Continued from Page 450)

without the addition of preservative or diluent. For a discussion of the actions, uses and dosage, see Pituitary Gland, New and Nonofficial Remedies, 1927, p. 285. The product is marketed in the form of tablets containing 1 and 3 grains respectively. Lederle Antitoxin Laboratories, New York.—*Jour. A. M. A.*, February 18, 1928, p. 545.

PROPAGANDA FOR REFORM

Dietary Deficiencies and Infection—A study has been made attempting to correlate the production of rickets with the susceptibility to tuberculosis. In the white rat, rickets may be produced with comparative ease. On the other hand, this animal is highly resistant to tuberculosis when the organisms are given subcutaneously. Young rats were fed on rations presumably adequate with the exception of calcium and the antirachitic factor. Rickets regularly appeared, more readily in cloudy weather than in bright. In the group of these animals injected with tuberculosis organisms the disease could be demonstrated. The series given the defective ration alone developed rickets but no tuberculosis, while doses of the infecting organisms many times larger than those used in the rachitic group failed to induce tuberculous lesions in a number of rats given an adequate ration. Similar results were obtained when the experimental ration lacked only vitamin D for several generations. Rickets was produced and with it a susceptibility to tuberculosis.—*Jour. A. M. A.*, February 4, 1928, p. 386.

Abramsism Abroad—The fantastic hokum of Albert Abrams is practically a dead issue in the United States. It has been relegated in this country to obvious fakers, some osteopaths, and the occasional physician who suffers from an itching palm or a lack of scientific balance. The Abrams' fantastic hokum is now deluding the credulous in England, Canada, and

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France. In Canada it has no support from the more responsible element of the medical profession. In France the Abrams nonsense seems to be mainly boosted by one Régnault. It is in England, however, that the E. R. A. has taken on its most amusing, or, should we say, its most tragic aspect? The chief exponent of the Abrams cult in the British Isles is Sir James Barr, who was once president of the British Medical Association. Sir James seems to have swallowed Abrams' theories hook, line and sinker.—*Jour. A. M. A.,* February 4, 1928, p. 401.

Asthma-Sera — This is another iodid-containing asthma and hay fever nostrum. The statement "Asthma-Sera Ends Asthma and Hay Fever Forever" appears on the stationery sent out by the R. M. B. Laboratories, Seattle, Washington. It does not appear on the trade packages which are subject to the control of the federal authorities which enforce the Federal Food and Drugs Act. Four bottles of Asthma-Sera "is considered a full treatment"; price, $10.50. However, the purchaser of four bottles is told that, if any symptoms of asthma remain when the first half of the fourth bottle is finished, he "should order two more bottles of Asthma-Sera immediately." The A. M. A. Chemical Laboratory analyzed Asthma-Sera and reports that it is essentially a solution containing 8.8 per cent strontium iodid, 0.43 per cent sodium iodid, and an emodin-bearing (laxative) drug. That iodids will be effective in certain forms of asthma is well known to every physician. Strontium iodid has no advantage over sodium or potassium iodid.—*Jour. A. M. A.,* February 11, 1928, p. 480.

Prevention of Colds by Ultra-Violet Radiation— In 1926 Barenberg, Friedman and Green found that infants exposed to ultra-violet radiation improved in general health during the first month of treatment, but contracted an increased number of colds during the second, third and fourth months. Accordingly, Maughan and Smiley attempted to administer a quan-

(Continued on Page 462)

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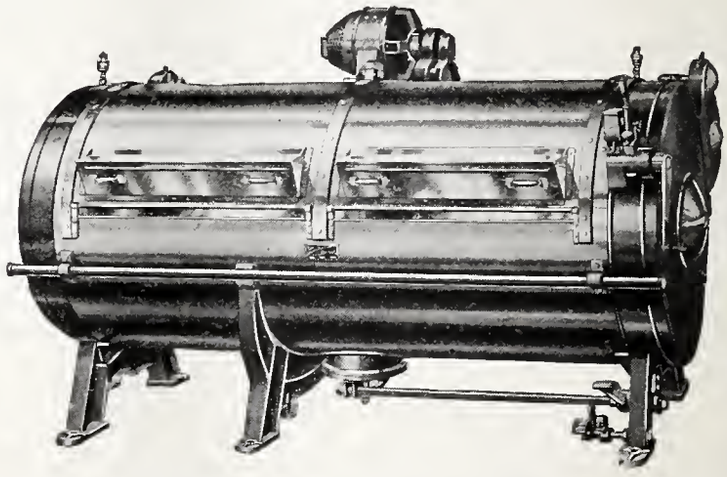

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Vocational Training for Cardiac Children—The experiment in vocational training of boys and girls with heart affections, carried on for several years in special classes in two trade schools of New York's public-school system, seems to have been so far successful as to indicate the practicability and value of such training. Of 115 girls discharged during the first two and a half years of the classes, the majority of those who completed the course were recently found to be working at the trade they had learned or a related trade, and were earning higher wages with shorter periods of unemployment than those who entered occupations not related to their trade training.

Only those children are admitted to the classes who in the opinion of the examining physician will probably be able to carry on the industry and who can meet the educational requirements for working papers. The majority of the girls at work were able to carry on normal work without losing time on account of ill health. It is suggested that this class of children do not need segregation in special classes if they are kept under adequate medical supervision.—United States Department of Labor, Children's Bureau, Washington.

The Physician—There are men and classes of men who stand above the common herd, the soldier, the sailor, the shepherd not infrequently; the artist rarely; the physician almost as a rule. He is the flower of our civilization, and when the stage of man is done and only to be marveled at in history, he will be thought to have shared as little as any in the defects of the period and most nobly exhibited virtues of the race. Generosity he has, such as is possible to those that practice an art, never to those who drive a trade. Discretion, tested by a hundred secrets, tact tried in a thousand embarrassments and, what are more important. Herculean cheerfulness and courage.—Robert Louis Stevenson.

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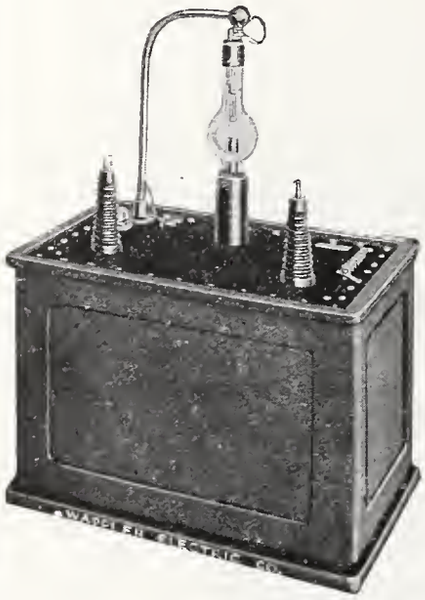

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(Continued from Page 453)

tity of ultra-violet radiation equivalent to that to which the ordinary city dweller is exposed during the summer. They conclude that irradiation resulted in a reduction in the frequency of colds. Barenberg and Lewis have completed further experiments in which overradiation was guarded against. Their results were no better than before. On the one hand are well-controlled experiments with negative results in which the dosage was large. On the other hand are imperfectly controlled experiments and success which the investigators attribute to low dosage. Positive statements, faith and investments may well await further evidence.—*Jour. A. M. A.,* February 18, 1928, p. 547.

Refractoriness to Insulin—There is a gradually increasing number of records of diabetic patients who seem to be resistant to the expected remedial action of insulin. In a recent case a patient proved relatively refractory to insulin for some months, responded only to enormous doses, and slipped into coma or precoma as soon as these doses were reduced. Tests showed that the refractory condition was not due to an inhibitory substance—an anti-insulin—in the blood. The observers of this case are inclined to believe that the peculiar reactions shown by their patient can best be explained by assuming that the diabetes was not due exclusively to pancreatic insufficiency, but to the lack of some substance other than insulin and equally necessary for the metabolism of carbohydrates.—*Jour. A. M. A.,* February 18, 1928, p. 549.

"Colloidal Gold"—Colloidal Gold was developed by Professor Louis Kahlenberg and Dr. Edward H. Ochsner. It is claimed that the remedy has proved far superior to the roentgen ray and radium in the treatment of inoperable cases of cancer and also as a postoperative treatment. The Council on Pharmacy

(Continued on Page 561)

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Those interested may read with profit, an article by Althauser and Schumacher (*Arch. Int. Med.*, Vol. 40, No. 6, page 857), and we append comments by these authors, found at the close of their study:

1. Ephedrin may be of benefit in some cases of chronic hypotension.

2. The results of ephedrin therapy in acute hypotension of shock are doubtful.

3. In asthma and hay fever ephedrin is of great value, completely controlling attacks in about half of the cases and giving partial relief in another one-fourth of the cases.

4. The advantage of ephedrin over epinephrin is that it is effective when given by the mouth; that its action is longer; that it does not produce local irritation as a nasal spray.

5. The use of ephedrin in urticaria is not promising. —Editorial, *Virginia Medical Monthly*.

Health Problems Being Studied by Bureau of Mines —During the past three years the Pittsburgh station of the bureau has developed an instrument for recording extremely minute concentrations of carbon monoxid in air. Work on the improvement of this apparatus and the extension of its usefulness is still in progress.

Catalysts have been suggested as means of eliminating the carbon monoxid hazard from automobile exhaust gases. Certain existing catalytic materials are being tested for efficiency in this capacity.—United States Department of Commerce.

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Colfax, California

CALIFORNIA
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WESTERN MEDICINE

VOLUME XXVIII APRIL, 1928 No. 4

RECENT ADVANCES IN THE TREATMENT OF PERNICIOUS ANEMIA*

By CYRUS C. STURGIS, M. D.
RAPHAEL ISAACS, M. D.
AND
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Ann Arbor, Michigan

PERNICIOUS anemia is a condition of unknown etiology, most frequently occurring during middle life or later, usually characterized by a marked reduction in red blood cells and hemoglobin in the peripheral blood, always associated with an achlorhydria and frequently complicated by degenerative changes in the spinal cord. Until recently true pernicious anemia has been considered as inevitably fatal although a great majority of patients, at some time during the course of the disease, show at least one period of improvement which in some instances may be of long duration.

PERNICIOUS ANEMIA SYNDROME

It is not the purpose of the present article to describe at length the clinical features of this disease, for it is a syndrome which is now recognized with a fair degree of conclusiveness. With the possibility of a cure at hand, however, it is now of great importance for the general practitioner to keep constantly in mind the more obvious symptoms and signs of the condition. By this means only can pernicious anemia suspects be detected and studied in a thorough manner for the purpose of confirming or eliminating the diagnosis. As Hurst [1] has emphasized, the provisional diagnosis of pernicious anemia can be made without the aid of modern methods, as certain striking features are apparent following even a superficial examination. For example, if a person of middle age or older complains of the symptoms observed in any severe anemia (ease of fatigue, dyspnea, palpitation, edema of the ankles) and in addition has a pronounced yellowish pallor, it is probable that the patient has pernicious anemia. If in addition there are gastric symptoms, an achlorhydria, persistent numbness and tingling in the hands and feet and impairment in the sense of position of the lower limbs, the diagnosis of pernicious anemia is almost certain, even before the blood is examined. While it is not our intention to discuss the finer details of the diagnosis of this disease, it should be emphasized that the condition can be recognized with a high degree of accuracy following a thorough study.

ETIOLOGY

Nor is it possible at this time to speculate concerning the etiology of the disease. There is a wide diversity of opinion concerning this, and there is no convincing evidence at present which explains the mechanism of the production of the anemia; even more vague are the views concerning the changes in the nervous system. There have long been two opposing theories concerning the actual cause of the anemia; the one maintaining that it is the result of defective blood formation, and in support of this there is very strong evidence; the other asserting that it is due to increased blood destruction. There is some evidence, by assumption, which is in accord with this latter view. It is entirely possible that the anemia may result from the operation of a combination of the two factors.

The chief purpose of this article is to discuss the efficacy of the more recent therapy of pernicious anemia and to give in detail the practical methods whereby the practitioner may apply it efficiently.

THE TREATMENT OF PERNICIOUS ANEMIA

In 1925, seventy-six years after the symptom complex of pernicious anemia was first described by Thomas Addison, there was no conclusive evidence to indicate that a curative therapy was available. No other proof is required of this than the very large number of therapeutic measures which were alleged to be of value; furthermore, experienced observers were all of the same conclusion, namely, that eventually the disease always terminated fatally. It is possible that such treatment as general measures to improve the patient's nutrition, dilute hydrochloric acid, arsenic and iron administered in a variety of forms and by various routes, splenectomy, blood transfusions, and the removal of foci of infection, have accomplished a certain amount of good. There is no evidence to indicate, however, that any one of these remedies, or a combination of them, have uniformly and significantly improved the health of a carefully observed group of patients with pernicious anemia or prolonged their lives for a noteworthy period.

In 1926 Minot and Murphy [2] summarized the experience of previous investigators with the dietary treatment of pernicious anemia and presented for the first time their own results, which indicated very strikingly the beneficial effect of a liver diet in the treatment of this disease. This report followed the experimental investigations of

* From the Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan, Ann Arbor, Michigan.

Being the third annual Scripps Clinic lecture, delivered at the Scripps Metabolic Clinic, La Jolla, San Diego.

Whipple and Robscheit-Robbins,[3] who demonstrated clearly that, in the anemia of dogs due to hemorrhage, the regeneration of blood was augmented, following the addition of liver to the diet. The most recent publication by Minot and Murphy [4] summarizes the effect of the liver treatment in 125 patients with pernicious anemia who had received this therapy for a period varying from three months to three and a half years. They conclude that "practically all patients with this disease are benefited, usually markedly and promptly. In almost all instances the red blood count had risen above four million per cubic millimeter, and if the diet had been taken continuously and satisfactorily the counts had remained above this level to the present time."

Since the opening of the Simpson Memorial Institute we have treated approximately fifty patients with pernicious anemia by use of calf's liver or a liver fraction.* [5] In those patients without serious neurological complications, and these constituted a great majority, the red blood cells increased from an average of 1,500,000 per cubic millimeter for the group, to an average of 4,000,900, red blood cells per cubic millimeter. The patients have been under observation a variable period of time, but none of them longer than seven months. The lowest count of the series was 4,100,000 after twenty-nine days of treatment, and there is every reason to believe from past experience that the blood count of all of these patients will reach normal limits with additional treatment. The rapidity with which the red blood count approaches normal following the treatment with liver, varies with different patients, but the increase, in our experience, has been at a rate averaging between 80,000 and 100,000 red blood cells per cubic millimeter daily. It is impossible to conclude from this series of patients alone that the feeding of one-half pound of liver daily will cause the blood to return to normal in patients with uncomplicated pernicious anemia, but these results so closely corroborate those reported by Minot and Murphy that the beneficial effects of liver in these patients appear to be an established fact. Associated with the changes in the peripheral blood, is a very striking improvement in the general condition of the patients which is apparent within three to five days after the beginning of the treatment. This improvement is very impressive and is entirely comparable in extent to the striking changes observed following the administration of dried thyroid gland to patients with myxedema. The earliest favorable evidence is an increase of appetite which in the course of a few weeks may become ravenous; this is associated with a general sense of well-being and improvement in strength. Within a short time after the treatment is begun there is a disappearance of fever, the yellowish pallor and the digestive symptoms, a return of the pulse rate to normal, a loss of edema and a gain in body weight. Almost without exception all of the symptoms which are directly referable to the anemia disappear in the course of a month or six weeks.

CHANGES WHICH OCCUR IN THE BLOOD FOLLOWING THE ADMINISTRATION OF LIVER

The most striking and constant early change which occurs in the peripheral blood following the ingestion of a requisite amount of liver daily, is an increase in the percentage of young red blood cells or reticulocytes. This increase is almost always apparent within three to five days after the treatment is begun, at which time the percentage count increases from a normal of 1 per cent or less, to 5 or 6 per cent. The increase continues until between the fifth to the eighth day, at which time it usually reaches its greatest height of from 10 to 30 per cent. There is then a gradual decline and at the end of approximately fifteen or twenty days the percentage of reticulated cells reaches normal limits, where it remains thereafter. Following ten days or two weeks of the treatment there is an appreciable rise in the red blood count, which continues to increase in an amount varying between 80,000 and 100,000 red blood cells per cubic millimeter daily until normal is reached. The hemoglobin percentage rises at a somewhat slower rate than the red blood count, and as a result the color index, which is at first high, gradually falls to below 1.0. With the return of the red blood count to normal, there is a disappearance of anisocytosis and poikilocytosis. The other changes in the blood are not striking, although there is quite constantly an increase in the white blood cells to 10,000 per cubic millimeter or slightly higher, after a few days of the liver therapy.

Recent developments have shown that the original diet suggested by Minot and Murphy [2] was unnecessarily complicated. It consisted of 120 to 240 grams of cooked calf's or beef liver, 120 grams of beef or mutton muscle meat, not less than 300 grams of vegetables, and 250 to 500 grams of fruit, especially peaches, apricots, strawberries, pineapple, oranges, and grapefruit. In addition, one egg and 240 grams of milk may be given daily. To allow for a total intake of between 2000 and 3000 calories, other foods such as breads, potato and cereals may be added to the diet. Upon theoretical grounds, it was recommended that the amount of fat be limited to 70 grams daily, although in a recent publication [4] the authors state that "excess of fat has not inhibited a rapid growth of blood cells." It has been our experience that the one essential factor in the success of the diet is a sufficient quantity of liver daily, and unless the diet of the patient under consideration is strikingly inadequate in other respects the remainder of the food intake may be left safely to the patient. A practical method of treatment is to give the patient one-half pound of liver daily, either cooked or uncooked, until the blood returns to normal. This may be prepared according to a wide variety of recipes, but it is

* Through the courtesy of the Harvard Pernicious Anemia Commission we were permitted to use this fraction of liver which was prepared according to the method of Cohn, Minot, et al. These authors describe the fraction as follows: "This fraction represents about 1 per cent of the liver. It contains nitrogen, but is non-protein in nature, is precipitated by alcohol and soluble in water. The indications at present are that the effect is not due to known vitamins."

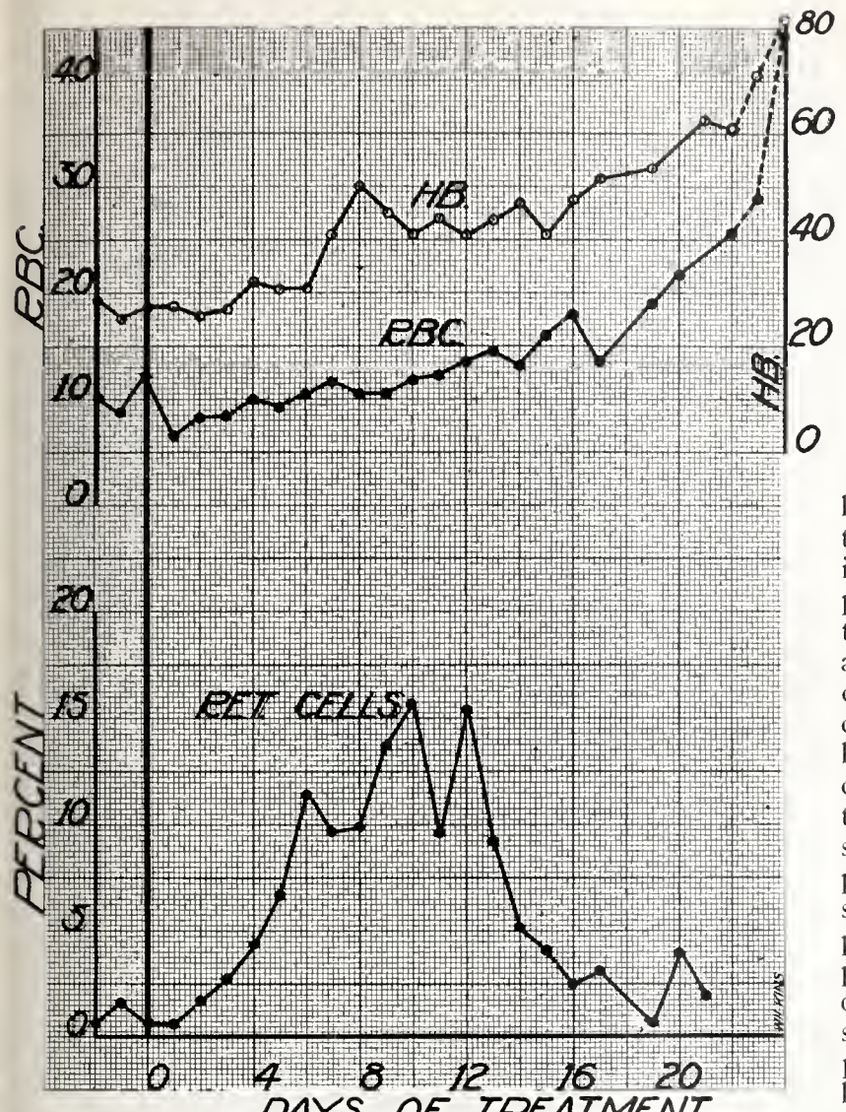

Chart I—The effect of the feeding of liver on the hemoglobin, red blood cells and reticulated cells of the peripheral blood in a patient with pernicious anemia. The equivalent of one-half pound of liver was first given at a point indicated by the heavy vertical line at the left of the chart; this amount was continued daily throughout the period of observation. Before the liver treatment the reticulated cells averaged slightly over 1 per cent; within a short time after the beginning of the treatment there was a rapid rise in these cells until the peak of about 15 per cent was reached on the tenth day after the liver diet was begun; after a rapid secondary rise, the reticulated percentage reached normal ten days later, which was on the nineteenth day of treatment. There was a gradual but constant increase in the hemoglobin percentage and red blood cell count until on the twenty-second day when the red blood cells had increased from a level of about one million to two and a half million per cubic millimeter and the hemoglobin was 84 per cent. terval from an initial reading of 24 to 60 per cent. After seventy-eight days of treatment the red blood count was five million. The hemoglobin had likewise increased during this interval from an initial reading of 24 to 60 per cent. After seventy-eight days of treatment the red blood count was five million per cubic millimeter and the hemoglobin was 84 per cent.

important to impress upon the patient that this quota of liver must be taken regularly. Many patients prefer to take the liver in the uncooked form in amounts of one-fourth pound at 10 a. m. and one fourth pound at 3 p. m. The most efficient method of preparing uncooked liver is the following one suggested by Mrs. Dorothy Stewart Waller, dietitian of the Simpson Memorial Institute: "Trim uncooked liver free from connective tissue. Place through the food chopper, using the finest knife. Press the ground liver through a potato ricer. Add one-third of a cup of liver pulp to one-half cup of tomato bouillon, add salt and pepper to taste." Liver prepared in this manner is not unpleasant to the patients, and by consuming it in the middle of the morning and afternoon they are free to eat foods of their own choice at regular meal times. If this amount of liver is consumed daily, the blood of patients with uncomplicated pernicious anemia will return to normal. After the normal level has been reached and maintained for approximately four weeks, the amount of liver may then be reduced to one-fourth pound daily. In another month, if there is no decrease in the red blood cells, it may be further reduced to one-fourth pound five days a week. It is probably possible to reduce the quota of liver to even smaller amounts than this, but the minimum amount of liver which will keep a patient's blood in normal condition has not yet been determined and it is probable that this varies with individual patients. The only safe rule is to reduce the dosage gradually to the smallest amount which will keep the red blood count at 5,000,000 red blood cells per cubic millimeter. Experience teaches us, however, that some liver must be taken constantly in order to avert a relapse of the disease. For this reason it is impossible to state that the liver treatment for pernicious anemia is a cure in the strict sense of the word. Nor is it possible at present to state the duration of the improvement which results from this form of therapy. Time only will give the answer to these questions. Minot and Murphy have reported three patients who have recovered, and after continuously taking the liver diet for three and a half years have an average count of 4,810,000 red blood cells per cubic millimeter; this is the longest period of observation of patients with pernicious anemia following the liver treatment.

It is to be expected that in a certain proportion of patients it will be reported that the treatment has failed to produce beneficial effects. In our experience there has been a group of patients who have failed to improve or have suffered a relapse because they have not consumed a sufficient quantity of liver. This may be averted by careful observation of the patient's red blood cell count at regular intervals, as this is the most efficient way to determine accurately that the treatment is being carried out properly. In some instances patients discontinue the liver because they develop an aversion to it, but with the introduction of the liver fraction as a substitute for raw or cooked liver this difficulty may be eliminated.

THE EFFECT OF THE LIVER DIET IN PATIENTS WITH PERNICIOUS ANEMIA AND ASSOCIATED NEUROLOGICAL CHANGES

Evidence of involvement of the nervous system has been apparent in approximately 80 per cent of all patients with pernicious anemia whom we have observed. In a majority of instances the complaints have been minor ones such as numb-

ness and tingling of the hands and feet. In a smaller group the condition has been more severe, as evidenced by difficulty in locomotion due to a lesion in the posterior columns of the spinal cord with a resultant loss of the sense of position of the legs; in addition a few of these patients have had an associated spastic paralysis as a result of degenerative changes in the lateral columns of the cord. The feeding of liver has caused the blood of these patients to return to normal in the usual period of time. If the neurological complaints have been of a minor nature they have usually disappeared or become much less apparent at the time the blood has returned to normal. It is entirely possible that this improvement is due to a return of the patient's strength and sense of well-being at which time it is to be expected that symptoms such as numbness and tingling would be less annoying. A large percentage of patients who have the more advanced neurological complaints likewise show considerable improvement, but it is too much to hope that the patients of this group will again walk normally, even though all evidence of the anemia disappears. These patients have received, in addition to the liver therapy, massage and exercises which are designed to teach them better coordination of the muscles of the lower limbs. It has been our practice to urge such patients, as soon as possible after admission to the hospital, to sit up in a chair and later to attempt to stand, at first with assistance and later without support. They are then encouraged to take a few steps with the feet spread far apart in order to form a broad base, and have eventually, in most instances, been able to walk fairly well with the aid of a cane. There is no evidence to indicate that the lesion in the spinal cord is favorably affected, for the ability to walk again may be due entirely to the improvement in the patient's general strength and to a better method of walking which partially overcomes the disability.

In a small group of patients with advanced neurological complications there has been a loss of control of the sphincters of the rectum and the bladder. A few of these have finally developed a cystitis which was associated with chills and fever and pyuria. In a few such instances the favorable effect of the liver, or liver fraction, appears to have been neutralized, for the blood did not return to normal after a prolonged period of treatment. It is not known if any severe infection in a patient always has this effect, but it is certain in any event that the presence of a severe and obvious infection may explain the failure of the liver treatment in a certain number of patients.

Thomas Henry Simpson Memorial Institute for Medical Research, University of Michigan, Ann Arbor, Michigan.

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THE ROENTGEN DIFFERENTIATION OF BONE TUMORS*

By William B. Bowman, M. D.
and
Lowell S. Goin, M. D.
Los Angeles

Discussion *by Lloyd Bryan, M.D., San Francisco; Henry Snure, M.D., Los Angeles; William H. Sargent, M.D., Berkeley.*

THE presence of a bone tumor is usually obvious, although certain tumors may be confused with syphilis or osteomyelitis. The task of the roentgenologist is to classify the tumor, particularly with reference to its possible malignancy. The most valuable method of study is by application of Bàetjer's four cardinal points. These are: origin of the tumor; presence or absence of bone production; condition of the cortex; and invasion of adjacent tissues.

ORIGIN

The tumors arising from the cortex are: periosteal sarcoma, osteosarcoma, enchondroma, ossifying hematoma, and cysts (rarely).

Ossifying hematoma is not a bone tumor, nor does it arise from the cortex; but, since it may be confused with bone tumors, and since it occurs between the periosteum and the bony cortex, it is included here. The value of the study of the origin of a tumor is apparent at a glance. If it can be established, for example, that a tumor is cortical in origin, it follows that the tumor is not a carcinoma, since carcinoma can arise only in the medulla because it is borne there and not to the cortex by the circulatory system. And, since it is rare to have a cyst originating in the cortex, the probabilities are against the tumor being a cyst.

The tumors arising from the medulla are: medullary sarcoma, carcinoma, cysts, giant cell tumor (giant cell sarcoma), enchondroma.

The same reasoning as used above will serve to eliminate certain tumors as possibilities in tumors arising from the medulla. That is, if a tumor is medullary in origin, it positively cannot be a periosteal sarcoma, an ossifying hematoma, or an osteoma. These three are definitely ruled out and, by use of the other three points, further exclusion may be accomplished.

BONE PRODUCTION OR BONE DESTRUCTION

Certain tumors are characterized by the production of bone, *e. g.,* osteoma. Others destroy bone only, *e. g.,* carcinoma, which being composed of

* Read before the Radiology Section, California Medical Association, at its Fifty-Sixth Annual Meeting, April, 25-28, 1927.

epithelium, obviously cannot produce bone. Still others both destroy and produce bone, *e. g.*, the sarcomata, the bone production varying inversely with the degree of malignancy. A fourth group, cysts and enchondroma, produce bone only after fracture has occurred.

Bone production occurs in the following tumors: periosteal sarcoma, osteo sarcoma, osteoma, ossifying hematoma, and bone cyst, and enchondromata after trauma.

Bone destruction occurs in: all sarcomata, carcinoma, cysts, myeloma, giant cell tumor.

We now have two facts by which we may study the tumor and which will enable us to exclude certain additional growths. If, for example, it has been determined that the tumor in question is of cortical origin and is characterized by the production of new bone, we may rule out medullary sarcoma, giant cell tumor, cysts, myeloma, enchondroma, and carcinoma. This leaves the bone-producing tumors of cortical origin to be considered, namely, periosteal sarcoma, osteoma, and ossifying hematoma. Here it may be noted that the new bone production of peripheral sarcoma is quite characteristic and consists in the laying down of parallel thin plates of bone at right angles to the long axis of the shaft.

We now proceed to the consideration of the third point.

CONDITION OF THE CORTEX

The cortex is expanded and thinned by the following tumors: enchondroma, bone cyst, and giant cell tumor. These tumors do not break down the cortex unless they become so large that they do so mechanically.

The cortex is destroyed by: sarcoma (all types) and carcinoma. This is a very important point. Barrie has said that any chronic lesion which has broken through the periosteum should be regarded with suspicion as to its malignancy unless known definitely to be suppuration. Benign tumors grow slowly and in the direction of least resistance, namely, up and down the length of the bone. Therefore they tend to expand the bone and to give it a spindle shape. Malignant tumors grow rapidly in all directions, destroying bone as they grow. Therefore usually they destroy the cortex rather than expand the bone.

If we now continue the analysis of the bone-producing tumors of cortical origin, we find that the remaining possibilities are: periosteal and osteosarcoma, osteoma, and ossifying hematoma. Suppose that it is now noted that there is destruction of the cortex of the bone. Hematomata and osteomata do not destroy the cortex and are thus eliminated from further consideration. The points which aid in distinguishing between periosteal and osteosarcoma will be discussed later.

INVASION

All malignant tumors tend to invade the surrounding tissues. Benign tumors never do.

Benign tumors have sharply defined limiting walls. They rarely break down the cortex unless mechanically, after the growth has become very large. Giant cell tumors are an exception to this rule and, according to Bloodgood, may destroy cortex without any increase in malignant characteristics. Benign tumors are unaccompanied by bone production except when they have caused pathological fractures. Under the same conditions, and not otherwise, periosteal reaction and proliferation may occur. They grow slowly and expand and displace bone, rather than destroy it. They rarely involve joints.

Malignant tumors grow rapidly and destroy the bone rather than expand it. They are accompanied by bone production. Their outlines are vague and they are not limited by sharply defined walls. They destroy the cortex early and invade the surrounding tissues. These differential points may be tabulated as follows:

Differential Diagnosis Between Benign and Malignant Tumors

Benign	*Malignant*
Sharply defined limiting walls.	Poorly defined, vague and indefinite walls.
Rarely break down cortex and only late in course, when tumor has become so large as to break cortex mechanically.	Destroy cortex early.
Rarely involve joints.	Often involve joints if adjacent.
Expand and displace bone.	Invade and destroy bone.
Ossification proportionate to growth.	Ossification not proportionate to growth.
Growth slow.	Growth rapid.
No periosteal proliferation or reaction except when fracture occurs.	Periosteal proliferation and reaction common.

Let us now consider, I. The Malignant and II. The Benign Tumors.

I. THE MALIGNANT TUMORS

SARCOMA

Sarcoma may be conveniently studied as (*a*) periosteal sarcoma, (*b*) osteosarcoma, and (*c*) medullary sarcoma. There are other classifications, many of them superior from a pathological standpoint, but we have no concern with the cell types of the tumor, as we cannot see the cells and we need concern ourselves only with identifying growth as a sarcoma of certain origin.

PERIOSTEAL SARCOMA

This tumor arises from the periosteum, as its name indicates, and occurs chiefly at the ends of the long bones. The femur, tibia, and humerus, are most frequently involved. This growth is not common in the middle third of a bone, and the presence of a growth there is evidence against its being a periosteal sarcoma. Usually it is seen first as a shallow depression in the cortex of the bone with thin plates of bone in the soft tissue perpendicular to the long axis of the bone. This bone formation is quite typical of periosteal sarcoma. It is a bone-producing tumor, most of the bone being laid down in the soft tissues. It does not expand the bone and there is comparatively little bone destruction because the growth is so extremely malignant that death ensues before extensive destruction has occurred. A rapidly growing

TABLE SUMMARIZING BONE TUMOR SIGNS AND SYMPTOMS

Tumor.	Origin.	Bone Production and bone Destruction.	Condition of Cortex.	Invasion.	Outline and Density.	Location.
Periosteal sarcoma.	Periosteum and cortex.	Productive and destructive. New bone perpendicular to shaft.	Eroded. Death usually occurs before much destruction has occurred.	Invades tissues rapidly.	Outline vague. Tumor density greater than that of surrounding tissue.	Ends of long bones, femur, tibia, and humerus most often.
Osteosarcoma	From cortex.	Bone production and destruction.	Extensive destruction of shaft of bone.	Invades tissues.	Outline vague. Density sometimes very great.	Long bones.
Medullary sarcoma.	From medulla.	Purely destructive.	Extensive destruction.	Extensive invasion.	Vague outline, decreased density.	Ends of long bones.
Carcinoma.	From medulla.	Purely destructive.	Destroys cortex. Fracture common.	Invasive.	Vague outline. Areas of decreased density: sometimes nodes of increased density.	Spine, ribs, pelvis, skull, and middle third of long bones.
Giant cell tumor.	From medulla.	Expands bone; no new bone production.	Cortex intact ordinarily.	No invasion.	Distinct outline. Tumor density less than that of normal bone.	Ends of long bones and mandible.
Myeloma.	From medulla.	No bone production.	Cortex may be perforated. No marked destruction.	Invasive.	Multiple growth; regular outlines; areas of rarefaction.	Long bones.
Cysts.	From medulla; or rarely from cortex.	No bone production.	May expand bone slightly.	No invasion.	Sharply defined outline. Density decreased.	Long bones.
Enchondroma.	Either medullary or cortical; multiple tumors.	No bone production.	Intact. Bone may be expanded.	Non-invasive.	Distinct outline. Sharply limited walls. Density decreased.	Near epiphysis of long bones.
Osteoma.	From cortex. Perpendicular to shaft.	Bone production extensive. Tumor is of new bone.	Intact.	No invasion.	Outline distinct. Tumor of great density.	Any bone; near shoulder and knee most common.

periosteal sarcoma may invade an adjacent joint and involve the capsule and the periarticular tissues. Because of the spindle shape of the joint and the presence of fluid and periarticular swelling it may be confused with syphilis, tuberculosis or hemophiliac joint.

OSTEOSARCOMA

This tumor is rather slow growing, arises from the cortex, and is accompanied by extensive bone destruction. It is characterized by bone production, the amount varying inversely with the degree of malignancy. The more malignant the growth the less new bone it produces. The new bone production is in laminae perpendicular to the shaft, as in periosteal sarcoma. Bone production may be extensive. The growth extends into the soft tissues. The chief differential point between this growth and periosteal sarcoma is the extensive destruction of the shaft which occurs in osteosarcoma.

MEDULLARY SARCOMA

This is a very malignant tumor arising from the medulla and destroying the shaft. It does not contain new bone. A purely destructive process, it much resembles carcinoma from which it cannot be differentiated by means of the x-ray only. It is differentiated from myeloma by the regular outlines of the latter and the tendency of myelomata to extend along the shaft.

CARCINOMA

Carcinoma of bone is purely metastatic and is, therefore, always of medullary origin. It is most common in the middle third of the bone and involves most frequently the ribs, spine, pelvis, femur, and humerus. Metastases from carcinoma of the breast practically never occur in the bones of the forearm, leg, hand, or foot. There are two processes which occur in carcinomatous bone, osteoclasia and osteoplasia. The first is characterized by marked lacunar absorption with thickening of the bone, due to a calcification about the malignant process. Bone carcinoma is purely destructive and is accompanied by no new bone formation. It causes complete destruction of the cortex and invades the soft tissues. Pathological fractures are of common occurrence. The involved bone has a moth-eaten appearance, representing areas of bone destruction and replacement of tumor tissue. In the spine one or many of the vertebrae may be involved. Softening of the vertebral bodies leads to compression, with angulation and distortion of the vertebra. Metastases from prostatic carcinoma have a rather typical appearance. The bone is markedly mottled with areas of rarefaction and areas of great density. The rarefied areas seem to be walled off by a

process of condensation around them, due partly to a collection of malignant cells and partly to calcification. These metastases are most common in the pelvis and the lumbar vertebrae.

MYELOMA

Myeloma is a rare malignant tumor of bone marrow and is always multiple. It is commonest in the ribs and sternum, with the vertebrae, skull, femur, pelvis, and humerus, following in order. It is a destructive process, characterized by slow but extensive invasion of the medulla, absorption of the cortex with cortical perforation and multiple fractures. There is diffuse invasion of the soft tissues. The presence of Bence Jones' bodies in the urine is a somewhat characteristic feature of the disease.

II. THE BENIGN TUMORS

GIANT CELL TUMOR

This tumor, also called giant cell sarcoma, or hemorrhagic osteomyelitis, is an essentially benign tumor, showing no tendency to form metastases and little tendency to local recurrence after removal. Its common location is in the ends of the long bones, most frequently in the lower end of the femur, the upper end of the tibia and the lower end of the radius, in the order named. These tumors also frequently occur in the mandible and may develop in any of the long bones.

The tumor is of medullary origin and grows rather slowly, expanding the bone rather than destroying it. There is no new bone formation unless fracture occurs. The tumor may be very large. It is regular in outline and is marked by the formation of the trabeculae. The cortex is thin but intact unless the tumor has become so large as to rupture through the cortex mechanically. Sometimes there is a periosteal reaction with new bone laid down in the cortex so that the cortex is maintained intact in spite of very great expansion. Bloodgood states that the bony cortex may be completely destroyed or may be perforated in several places without increase in the malignancy of the tumor. Spontaneous fracture frequently occurs. The joint is not involved although it may collapse from simple absorption. There is no tendency to invasion of the soft parts.

CYSTS

Bone cysts are benign growths of medullary origin, occurring in the ends of the long bones, most frequently in the humerus, femur, and tibia, in the order named. They are slow-growing tumors, purely destructive, and expand the bone. They never pierce the cortex and they do not cross an epiphyseal line. Cysts tend to grow by expanding up and down the medulla, giving the bone a characteristic spindle shape. No new bone is produced unless fracture, which is common, occurs. Cysts may be divided by trabeculae, but are usually single large cavities. The walls are sharply defined. Cysts are commonly spoken of as being multiple, but they are usually seen in one bone only.

ENCHONDROMA

Enchondromata are of either medullary or cortical origin, are usually multiple and have sharply defined walls. The tumor is much less dense than the surrounding bone. They are often loculated. They are, as the name indicates, of cartilaginous structure. They occur near the epiphyses, but in the diaphyses of the bones. The epiphysis is never involved. They grow by expanding up and down the shaft, giving a spindle shape to the bone. Spontaneous fracture is common. The commonest location is the shaft of a phalanx. A single enchondroma cannot be distinguished from a bony cyst. The only differential point available is that enchondromata are usually multiple.

OSTEOMA

This is a bony tumor of cortical origin, purely productive in nature. They occur commonly at the shoulder and about the knee joint. The characteristic features are these: The tumor is composed of perfectly normal bone. It is usually perpendicular to the shaft. The bone is laid down evenly and the growth is sharply defined. The tumor is denser than the normal bone and the striae are differently arranged. They are frequently lobulated and often have a cauliflower appearance. Although they extend into the soft tissues there is no invasion. There is no bone destruction.

EXOSTOSES

Exostoses are somewhat similar, smaller, growths, usually seen as hook-shaped bony processes, invariably pointing away from the nearest joint. Sometimes they terminate in small osteochondroma. There is a rare hereditary form of multiple osteochondroma in which such a growth arises from the epiphyseal end of nearly every long bone.

OSSIFYING HEMATOMA

This condition is not a bone tumor, but may be mistaken for one. They are simply calcified clots following a traumatic or scorbutic subperiosteal hemorrhage. The new bone is laid down parallel to the shaft which is intact and which is usually seen through the shadow of the tumor mass. The growth is definitely limited by the periosteum.

The points brought out above are summarized as in the table presented with this paper.

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DISCUSSION

Lloyd Bryan, M. D. (135 Stockton Street, San Francisco)—The ground is so well covered in this paper that there is little left for discussion. The only thing that I see to add is regarding the discussion of giant cell tumors. While as stated in the paper they com-

monly occur in the ends of long bones they may at times occur in flat bones. We have recently had the opportunity to see two cases within the past year, one of a typical roentgen picture of giant cell sarcoma in the ilium, and a second one in the wing of the sacrum.

Doctors Bowman and Goin have mentioned the fact that these giant cell tumors throw out new bony growth after a fracture which results in a healing process. This same new bony growth and healing can many times be produced by radiation therapy.

❊

Henry Snure, M. D. (1501 South Figueroa Street, Los Angeles)—Doctors Bowman and Goin have completely covered all the essential points in the x-ray diagnosis of bone tumors. About all that can be added are the rare types and locations of some of the tumors, such as the giant cell tumors mentioned by Doctor Bryan. I have recently x-rayed a case of giant cell tumor of a flat bone, namely, the sacrum, diagnosis verified by tissue section.

A year ago I had the opportunity of reviewing films of bone tumor in Doctor Keinbock's Clinic in Vienna. Doctor Keinbock has been collecting these cases for years, and I found that the cardinal points of Baetjer as outlined in this paper gave a correct diagnosis in all but a few cases (excepting, of course, tumors where there had been surgical intervention, fracture or tumors too extensive to determine point of origin). However, five cases that appeared to be typical benign bone cysts of femur by x-ray examination were shown by tissue section to be slow-growing metastatic carcinoma from the thyroid gland. Doctor Keinbock stated that 4 per cent of his cases of typical Paget's disease from x-ray viewpoint developed a metastasis of the periosteal sarcoma type. A few cases of dystrophy greatly resembled metastatic malignancy, but here again the law of ages was helpful in most cases.

❊

William H. Sargent, M. D. (2490 Channing Way, Berkeley)—Doctors Bowman's and Goin's excellent presentation of the roentgen differentiation of bone tumors is liable to give one the impression that it is rather simple to distinguish between the benign and the malignant. Unfortunately it is quite otherwise in a considerable percentage of the cases. All of us have felt the weight of responsibility as we have gazed at the x-ray film of a confusing or doubtful bone condition.

Some time ago we sent films of a case which was thought to be a giant cell tumor of the ischium to the Registry of Bone Sarcoma. The subsequent course was typical of malignancy. We also recently saw a case with erosion of the cortex and a slight amount of new bone formation which has been variously diagnosed for the last six months, and still no general agreement.

In other words, while the various points so clearly outlined by the writers are of very great assistance, in a certain percentage of the cases the x-ray is not conclusive. All sources of information, such as the history, clinical findings, and Wassermann, must be carefully considered with the roentgen findings. A biopsy should not be done unless with tourniquet in place and an immediate amputation follows if the gross appearance of the tissue suggests malignancy.

Until recently we have had no place to which we could turn for well-crystallized information regarding bone tumors, but with the Registry of Bone Sarcoma well organized and functioning, we should all now become better informed about these comparatively rare conditions.

Cooperation with the registry and general adoption of its classification and nomenclature is highly desirable.

THE USE OF ALCOHOL AS A STANDARD GASTRIC TEST MEAL

By Garnett Cheney, M. D.

San Francisco

Discussion *by W. W. Boardman, M. D., San Francisco; V. R. Mason, M. D., Los Angeles; Elbridge J. Best, M. D., San Francisco.*

THIRTEEN years ago Ehrmann[1] tried the effects of alcohol on gastric secretion, and since that time several investigators have used an alcoholic meal in the study of gastric physiology. However, it has received no attention as a standard stimulus in fractional gastric analysis in this country, and very little abroad; the Ewald meal or cereal gruels usually being employed. Gross and microscopic examinations of stomach contents, fasting, and after various meals, are of recognized importance in the diagnosis of gastric disorders, but the marked variations in types of acid curves in health and the inaccuracy of the methods for their determination have caused some doubt as to the value of acidity estimations. As marked hyperacidity and complete absence of free HCl are fairly constant and characteristic findings in certain diseases affecting the stomach, fractional gastric analysis maintains a place as a procedure in thorough gastro-intestinal investigations. This seems to justify an endeavor to simplify the technique of administration of the meal and to minimize sources of error, where in hospital routine it is often necessary to have untrained nurses and medical students carry out the tests.

TECHNIQUE

The technique which is used on clinical wards and on diagnostic group service is similar to that of any other test-meal. Early in the morning, after twelve hours' fasting, a Rehfuss tube is passed and all the stomach contents are removed. The meal, consisting of 100 cc. 7 per cent alcohol, is then injected into the stomach through the tube and samples are withdrawn at one-half hour intervals up to one and one-half hours after the meal. This length of time is considered sufficient, as Bell[2] found that maximum acidity was reached in one and one-half hours in all types of acid curves except a few high normals. There is no stoppage of the tube by bits of food, the specimens are clear, and small amounts of bile, blood or mucus are readily recognized. The microscopic examination of the sediment and tests for blood and lactic acid are readily carried out, and it is not necessary to filter the contents to read the acid determinations with Topfer's reagent and with phenolphthalein. There are no food particles by which one may gauge the rate of emptying of the stomach after the meal which might be considered an argument against the use of alcohol. However, gastric x-ray studies and Bloomfield and Keefer's[3] method for the continuous quantitative estimations of gastric secretion give really accurate information on this point and show the rate

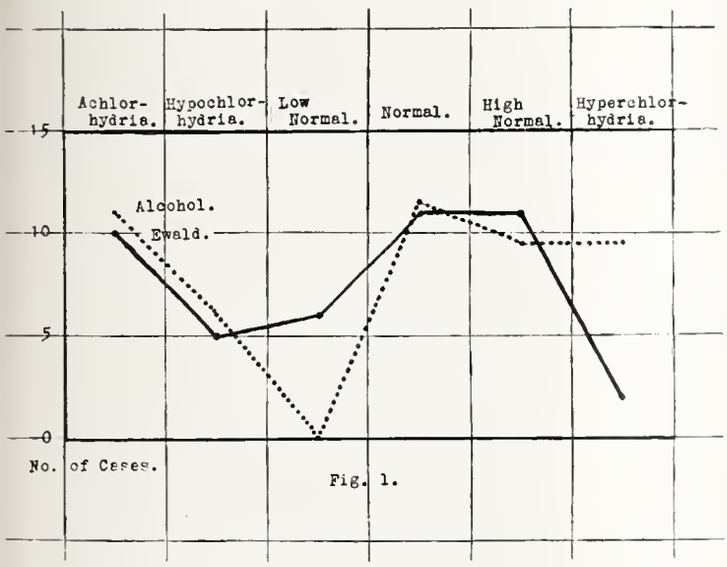
TABLE 1—*Comparison of Gastric Acidity in Fifty Patients Receiving Both an Ewald and an Alcoholic Test-Meal*

Meal	Achlorhydria	Hypochlorhydria	Low Normal	Normal	High Normal	Hyperchlorhydria
Ewald	10	5	7	12	12	4
Alcohol	12	7	0	13	9	9

of emptying to be inconstant even in the same individual.

COMPARISON WITH OTHER METHODS

In suggesting the substitution of a new type of routine test-meal for others that have been widely used, comparisons must be carried out and analyzed. In a series of 150 fractional alcoholic test-meals in a miscellaneous group of cases ranging in age from 14 to 78 years requiring gastro-intestinal investigations, fifty unselected patients received a second fractional analysis following the administration of an Ewald meal. This group received the two meals within a few days of each other and under the same conditions and the findings are presented in Table 1, and graphically in



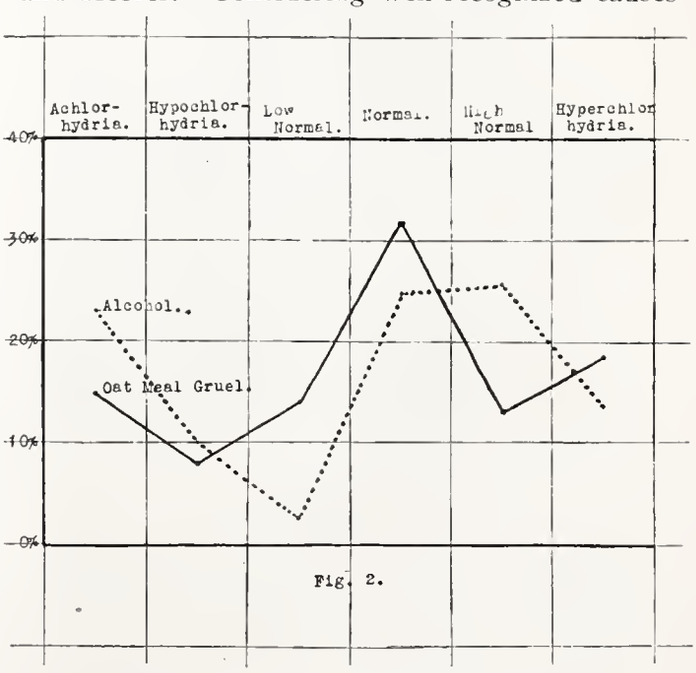
Graphic representation of findings in Table 1.

Fig. 1. The types of free acid curves have been divided into six groups according to the classification followed by Kohiyar.[4] The six groups are: (1) Complete achlorhydria. (2) Hypochlorhydria where the free HCl does not exceed 10 degrees. (3) Low normal where the free HCl is between 10 and 16 degrees. (4) Normal acidity where the free HCl is between 16 and 30 degrees. (5) High normal where the free acidity may reach 60 degrees. (6) Hyperchlordria where the free HCl rises above 60 degrees. This is an arbitrary division, but offers a fairly just basis for comparison between the two different types of meal. One must recognize that there is a considerable degree of variation in the acid curve in response to the same type of meal on successive occasions. Twenty-three double meals produced exactly the same types of curves. Five Ewald meal HCl titrations showed sufficient increase of acid over the comparable alcoholic meal titrations to place the curve in the group just above, while three titrations showed an increase of acid sufficient to place them in the second group above, and one in the third group above. Conversely fifteen alcoholic meal HCl titrations increased the acidity to one higher group, one to a group two higher, one to a group three higher, and one to a group four higher.

As it was thought that the slightly higher acid values obtained with the alcoholic meal might depend on the combination of free HCl with the cereal substance of the other meals a "laboratory test-meal" was prepared and samples titrated for acidity. Two glasses of water and two slices of toast well broken up were placed in a beaker. Twenty cc. of decinormal HCl was added at intervals while stirring the mixture, and it was not until after 80 cc. had been added that a positive reaction for free HCl could be obtained. Immediate titrations of gastric juice withdrawn one-half and one and one-half hours after an Ewald meal did not materially differ in acidity from titrations performed up to twenty-three hours after the meal.

INTERPRETATION OF TABLES

Table 2 shows a comparison of types of gastric HCl curves in the group of 150 patients receiving alcohol, and Kohiyar's[4] series of 1080 on similar subjects who received oatmeal gruel as a test-meal. Fig. 2 shows this graphically. Although the results appear somewhat dissimilar this is readily accounted for if one notes certain differences in the case groups studied. The 23 per cent achlorhydrias in the smaller series is close to the 26 per cent reported in 1500 cases by Bloomfield and Keefer.[5] Considering well-recognized causes



Graphic representation of findings in Table 2.

TABLE 2—*Comparison of Gastric Acidity in Response to Oatmeal Gruel and to Alcohol*

	Achlorhydria	Hypochlorhydria	Low Normal	Normal	High Normal	Hyperchlorhydria
Oatmeal Gruel 1080 Cases	159=14.7%	86=8%	151=14%	340=31.5%	143=13.2%	201=18.6%
Alcohol 150 Cases	35=23%	16=10%	4=2.7%	37=24.7%	38=25.3%	20=13.3%

of achlorhydria, advanced cancer of the stomach, pernicious anemia, and combined sclerosis of the spinal cord, constitute 7.3 per cent of the smaller group, while the per cent of similar cases for the larger group is less than half this, or 3.6 per cent. Taking the three normal groups as one, the per cent for the small group is 52.7 and for the large, 58.7. The somewhat higher hyperchlorhydria figure is from a series including 14.9 per cent of peptic ulcers, while the incidence of ulcer in the 150 cases is 11.3 per cent.

In observing the free HCl acid values recorded in sixty-five alcoholic test-meals by the method of Bloomfield and Keefer where the meal consists of 50 cc. of 7 per cent alcohol and samples are withdrawn at 10-minute intervals, the maximum acid value was always reached within 60 minutes except in two cases in which 65-minute samples were recorded. The acidity in these two was but a few degrees higher than in the preceding specimens. In twenty cases of this group the patients also received the alcoholic test-meal of 100 cc. of 7 per cent alcohol, and in none of them did the height of the acid curve exceed that of the smaller meal. Indeed the smaller meal gave constantly higher acid values, undoubtedly due to less dilution of the gastric secretion. In accordance with these findings it is felt that a small meal with frequent extractions over a short period of time will give all the important information obtainable by any of the longer methods now in general use. The routine fractional gastric test-meal now adopted consists of 50 cc. of 7 per cent alcohol with removal of samples at the end of 15, 30, 45, and 60 minutes. The fasting contents are removed before the meal.

CONCLUSIONS

1. The use of alcohol as a meal in fractional gastric analysis is recommended.
2. The technique of obtaining and analyzing samples is simpler and the acid values are slightly more accurate than when a cereal meal is used.
3. The acid curves are quite comparable to those obtained with other types of gastric stimulants.
4. A meal of 50 cc. of 7 per cent alcohol followed by withdrawal of four samples at subsequent 15-minute intervals will give as adequate information as may be obtained by a longer procedure.

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DISCUSSION

W. W. BOARDMAN, M. D. (350 Post Street, San Francisco)—Doctor Cheney has called attention to a procedure that greatly simplifies the clinical study of the secretory activity of the stomach. This is an essential part of every careful study of gastric function, but we are not so concerned with the actual percentage of acid found as we are with the general type of reaction of the gastric mucosa to a given stimulus.

The fractional meal has proven itself more reliable than the old Ewald meal, but especially in office work it introduced various difficulties, such as the administration of the meal after extracting the fasting content, and the fairly frequent obstruction of the tube by particles of the meal, etc.

Because of these difficulties I have utilized a meal of 50 cc. of 7 per cent alcohol with three extracts at 20-minute intervals during the past two years, and can therefore confirm Doctor Cheney's conclusion that the alcohol acts as a satisfactory stimulant to gastric secretion and that its use simplifies the procedure of gastric analysis.

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V. R. MASON, M. D. (838 Pacific Mutual Building, Los Angeles)—During the past years we have seen the development of standard gastric test-meals, motility meals, so-called "normal" meals and secretory meals and, after a prodigious amount of work, many observers concluded that these procedures, while giving necessary information in certain instances, added little or no useful data in other cases and at times led to error. But the analysis of gastric contents is a necessary part of many gastro-intestinal studies. For this purpose the "meal" advocated by Doctor Cheney has the advantage of simplicity and freedom from technical difficulties. It also has the advantage of production of stimulation of the gastric mucosa to secretion which is essential to the interpretation of the information obtained.

❦

ELBRIDGE J. BEST, M. D. (384 Post Street, San Francisco)—In view of the fact that much valuable information can be learned from a study of the gastric chemistry and secretion, any method that simplifies the process of obtaining this information is most welcome to the investigator. Doctor Cheney is most timely in offering a technique that will appeal to the busy workers.

Since the adoption of the "fractional" gastric analysis in place of the old, single test of 1914 many curves have been plotted by workers in widely separated medical centers. Out of this mass of material we have come to recognize certain curves that give real information. We have also definitely learned that the actual percentage of acid means very little.

To be readily accepted by the medical public the curves from a new test must be properly compared with those from the old test. The various old test-meals give similarly shaped curves although the acid value differs in detail. If one uses the same patient, giving the same test-meal as, for instance the Ewald meal, he will find curves representing different concentrations but of the same shape. Doctor Cheney finds this also true when using his alcohol meal. Consequently his comparison of the alcohol meal with

the Ewald meal by Kohiyar's group of curves, which depends upon acid concentrations, is not justifiable.

I doubt if we will ever find a test that will allow us to draw any conclusions from the actual acid figures. Therefore to accept Kohiyar's hyperacid curve as that with HCl over sixty will only lead to confusion. I need only call attention to normal curves found by Rehfuss, some of his figures being over one hundred. Because of so many variables our interpretation of gastric content findings can only be on the basis of relativity.

There being so much information to be found in the second hour curve, which seems of more value to me than the first hour, I cannot agree at present with the author in discontinuing the test at sixty minutes. We should know if the curve ascends, remains on the same level or descends.

Confusion in medicine has come from different workers using different tests but making no fair comparisons with existing findings. This can be corrected by proper correlation under the same controls. Many gastro-enterologists having felt gastric analysis to be unreliable, have discarded the test. Lockwood, in 1923, tried to show, by an ingenious tube of three tips each in a different part of the stomach, that the acid figures varied to such an extent in the different parts of the stomach as to make the analysis unreliable. A review of his figures plotted in curves shows all curves to be of the same shape, thus strengthening the contention that gastric analysis properly studied can be of great value.

I feel we need several carefully plotted curves from the same person using food and alcohol meals for comparison. With such material from many people we will be able to interpret the findings of this new and simpler test in terms of what we already know of the stomach secretion through the older and accepted test-meals.

THE ASSOCIATION OF SUSCEPTIBILITY TO SCARLET FEVER AND ACUTE TONSILLITIS*

By Arthur L. Bloomfield, M. D.
San Francisco

Discussion *by Karl F. Meyer, Ph. D., San Francisco; Edwin William Schultz, M. D., San Francisco; R. W. Burlingame, M. D., San Francisco.*

FOLLOWING the work of Dochez, Avery, and Lancefield,[1] who in 1919 developed practical methods for the biological classification of hemolytic streptococci, and who showed that these cocci could be separated into groups which were immunologically distinct, there has been an active revival of interest in the triad of hemolytic streptococcus diseases, namely, scarlet fever, acute follicular tonsillitis, and erysipelas.

The question of the rôle of streptococcus as the cause of scarlet fever, practically abandoned for many years, was promptly revived largely through the work of Bliss,[2] of Gordon,[3] and of Tunnicliff,[4] who showed that from the throats of scarlatina patients there could be recovered with great regularity hemolytic streptococci immunologically closely related or identical with one another, and different from the streptococci found in tonsillitis and in pyogenic infections. The final proof was soon brought by Dick and Dick[5] through the experimental production of scarlet fever in volunteers by swabbing the throat with cultures of streptococci derived from previous cases. Bloomfield and Felty[6] in the course of an investigation of acute tonsillitis found that this disease, which previously had been generally regarded as a nonspecific infection due to pyogenic cocci, pneumococci, or other organisms,[7] was also invariably caused by beta hemolytic streptococci. The evidence which led to this conclusion was the demonstration of the invariable presence of the streptococci in tremendous numbers in cultures made from the tonsils during the acute stages of the disease, and the observation that carriage of the organism in the tonsil was associated with resistance to reinfection which subsided when the carrier state ceased. It was not possible, however, to show that the "tonsillitis streptococci" fell into a sharply defined immunological group, although they differed from the scarlatinal strains. The streptococci of erysipelas, finally, have been studied by Birkhaug[8] and by Stevens and Dochez,[9] who find a close biological relationship between various strains. The entire subject has recently been reviewed by Stevens and Dochez,[10] and their work indicates a lack of complete specificity of the antigenic qualities of erysipelas and scarlatinal strains. In other words, while the scarlatinal strains are intimately related among themselves, as are the erysipelas strains, there are less close but still definite antigenic relationships between the scarlatinal, erysipelas, and pyogenic groups.

However, the main recent trend in the study of hemolytic streptococcus infection, stimulated by the practical objective of specific immunotherapy, has been along the lines of differentiation; and despite the obvious similarities of the organisms involved no particular attempts have been made to search for any common factors of susceptibility or resistance to scarlet fever, tonsillitis, and erysipelas.

The object of the present paper is to show that such common factors do exist at least with regard to susceptibility to tonsillitis and to scarlet fever.

CLINICAL SIMILARITIES IN SCARLET FEVER, ERYSIPELAS, AND TONSILLITIS

If one considers the clinical phenomena of scarlet fever, erysipelas, and tonsillitis, many points of fundamental similarity are found to exist, and they may be noted by way of introduction to the question of susceptibility.

1. The *incubation period* is of similar duration. The most accurate data on this point are from the experimental inoculations by Dick and Dick.[5,11] Following swabbing of the tonsils of volunteers with cultures of scarlatinal streptococci, symptoms began after approximately two days. Similarly tonsillitis occurred after an incubation period of thirty to seventy-two hours in a long series of volunteers into whose throats material containing hemolytic streptococci was introduced,[12] and in the case of epidemics of septic sore throat it has been observed that patients begin to fall ill within

* Read before the San Francisco County Medical Society, May 12, 1927.

forty-eight hours after probable infection of the milk supply.[13] Clinical observations of erysipelas suggest that a similar incubation period is frequent in this disease.

2. *The mode of onset* is characteristically abrupt in the entire group if the disease is at all severe. This fact is well known in the case of scarlet fever and erysipelas, but holds true equally well in acute follicular tonsillitis as pointed out by Felty and Hodges.[7] So, too, termination of fever and constitutional symptoms is frequently by "crisis" which occurred five times as often as gradual subsidence in Felty and Hodges' series.

3. The general character of the *fever and pulse curves* and the presence of outspoken *polymorphonuclear leukocytosis* are common to the three conditions.

4. *The complications* of all are similar, namely, local and metastatic suppurations or generalized infection, and nephritis.

5. *Two or more of the triad may occasionally be produced presumably by the same streptococcus.* Final proof of such occurrences must rest on biological tests of the organisms, but the clinical evidence is strong. For example, during the course of the influenza epidemic in 1918-19 we saw several instances of streptococcus empyema in which after thoracotomy, erysipelas started from the wound. In an epidemic of septic sore throat, erysipelas occurred as a complication in twenty of 487 cases.[13]

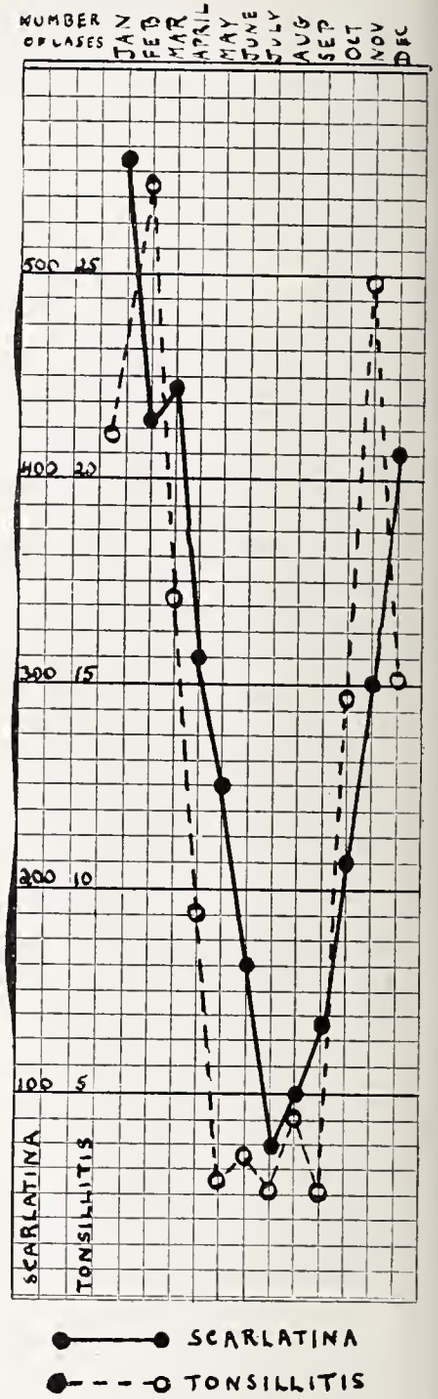
The development of typical scarlatinaform rashes during the course of streptococcus infections of all sorts (wound scarlet fever) is well known. The following case is of especial interest:

> A young woman of twenty-six years developed on February 7, 1921, what appeared to be a primary otitis media. Both drums bulged, and they were punctured, with discharge of thin pus which yielded hemolytic streptococci. Several days later the patient complained of sore throat. The pharynx was intensely injected and the tonsils were inflamed and swollen, with patches of exudate at the mouths of the crypts. Evidences of infection of the right antrum followed, and several days later (about two weeks after the onset of the otitis) there appeared an intense scarlatinal rash which had all the appearances and the typical distribution of the exanthem of a severe case of scarlet fever.
>
> After three days, when the rash was fading, the left ear, which was still draining, became swollen and from this, as a point of origin, a classical erysipelas spread over the entire face. At this point the patient was brought into the hospital. She thereupon developed a bilateral femoral thrombophlebitis and finally recovered after an illness of two months' duration.

Throughout the entire course the patient was under strict isolation and the precautions were carefully observed by the attendants. It appears probable, therefore, that in this instance a single strain of streptococcus produced successively, otitis, tonsillitis, scarlet fever, erysipelas, and thrombophlebitis, unless one makes the assumption that there were invasions by three or more different types of hemolytic streptococci.

6. Finally, the undoubted similarity of *seasonal incidence* of scarlet fever and tonsillitis may be pointed out. Chart I shows the curves of incidence drawn on a comparable scale,[14] of scarlet fever as reported to the Board of Health of Baltimore, and of tonsillitis observed in a carefully controlled group of young adults. The curves to all intents and purposes coincide.

CHART I—*Seasonal Incidence of Scarlatina and Tonsillitis*



Despite these obvious similarities in the clinical phenomena of various hemolytic streptococcus infections, the entire trend of recent work has been, as we pointed out above, to draw sharp immunological distinctions and to stress differences rather than common factors. It seems of interest, therefore, to point out the following associations of susceptibility to scarlet fever and acute tonsillitis. During the course of an investigation of acute tonsillitis it was found[6] that in the community under study there were a certain number of people who possessed a high degree of resistance to hemolytic streptococcus infection of the lymphadenoid tissue of the throat, and that such resistance could not be ascribed to immunity resulting from a previous infection. In brief, in a group of sixty-three young adults, twenty-nine gave no history of having had tonsillitis in the past, whereas thirty-four had had the disease one or more times. Of the former who, from the standpoint of history one might regard as less susceptible to the infection, five, or 17 per cent, developed tonsillitis during a period of observation of six months; of the latter twenty-one, or 62 per cent. Inasmuch as these

TABLE 1—*Association of Scarlet Fever and Tonsillitis (in Total of 498 Persons)*

Tonsillitis Positive 298		Tonsillitis Negative 200		Scarlatina Positive 92		Scarlatina Negative 406	
Scar. +	Scar. —	Scar. +	Scar. —	Tons. +	Tons. —	Tons. +	Tons. —
78 (26.2%)	220	14 (7%)	186	78 (84.9%)	14	220 (54.1%)	186

striking differences could not be related to any external factors of environment, exposure, carrier state or anatomical peculiarities of the lymphadenoid tissue, it was concluded that the former group were "naturally" less susceptible than the latter.

A STUDY OF RESISTANCE IN A SELECTED GROUP

If this assumption was correct, namely, that certain people were inherently resistant to one type of streptococcus infection (acute tonsillitis) the question arose as to whether these same individuals were also resistant to another type of streptococcus infection (scarlatina) caused by similar but serologically different organisms. Therefore, 498 people were carefully questioned as to previous history of tonsillitis and scarlet fever. The subjects were physicians, medical students, and trained nurses—a group highly satisfactory from the standpoint of obtaining accurate historical information. A few questionnaires which were doubtful were discarded, and we believe the data to be reasonably accurate.

The results are shown in Table 1.

It appears, therefore, that history of scarlet fever is much more frequent in people who have had tonsillitis and who are therefore presumably susceptible to hemolytic streptococcus infection than in those who have not had tonsillitis and who are therefore presumably more resistant.

The possibility immediately comes up that the association may be due largely to the fact that both are tonsillar infections; in other words, local anatomical conditions may favor infection quite apart from any specific relationship. Therefore, 267 members of the group were questioned as to history of diphtheria (another tonsillar infection) as well as to history of scarlatina and tonsillitis.

The figures in Table 2 were forthcoming on this point.

A study of Tables 1 and 2 shows no clear association between occurrence of tonsillitis and diphtheria, or scarlet fever and diphtheria such as holds with scarlet fever and tonsillitis.

MATHEMATICAL INTERPRETATION OF TABLES 1 AND 2

Dr. Raymond Pearl kindly subjected these figures to mathematical analysis and made the following note:

P_t = probability of tonsillitis; P_s = probability of scarlet, etc.

$P_t = \frac{298}{498} = .5984$ = probability of tonsillitis in this material.

$P_s = \frac{92}{498} = .1847$ = probability of scarlet fever in this material.

$P_{ts} = .5984 \times .1847$ = probability of both scarlet fever and tonsillitis.

Expected cases = $498 \times .1105 = 55.0 \pm 4.7$

Actual cases = 78

Difference = 23.0 ± 4.7 or 4.9 x P. E.

* * *

$P^1_t = \frac{143}{267} = .5356$ = probability of tonsillitis in this material.

$P_d = \frac{30}{267} = .1124$ = probability of diphtheria in this material.

$P_{td} = .5356 \times .1124 = .06020$ = probability of both tonsillitis and diphtheria.

Expected cases = $267 \times .06020 = 16.1 \pm 2.6$

Actual cases = 20

Difference = 3.9 ± 2.6 or 1.5 x P.E.

If, as is probably quite justifiable, we take in this case the probability of the occurrence of tonsillitis in this material as that given by the long series instead of that from the short series [P_t instead of P^1_t] the case then becomes:

Expected cases of both tonsillitis and diphtheria = 18

Actual cases = 20

Difference = 2

This is an even smaller difference than that arising if the probabilities are based on the short series only.

$P^1_s = \frac{46}{267} = .1723$ = probability of scarlet fever in this material.

$P_d = \frac{30}{267} = .1124$ = probability of diphtheria in this material.

$P_{sd} = .1723 \times .1124 = .01937$ = probability of both scarlet fever and diphtheria.

Expected cases = $267 \times .01937 = 5.2 \pm 1.6$

Actual cases = 9

Difference = 3.8 ± 1.6 or 2.3 x P. E.

TABLE 2—*Association of Scarlet Fever, Tonsillitis, and Diphtheria (in Total of 267 Persons)*

Tonsillitis Positive 143		Tonsillitis Negative 124		Scarlatina Positive 46		Scarlatina Negative 221	
Diph. +	Diph. —	Diph. +	Diph. —	Diph. +	Diph. —	Diph. +	Diph. —
20 (14.1%)	123	10 (8%)	104	9 (19.3%)	37	21 (9.4%)	200

Again taking the probability of scarlet fever from the longer series, we have:

Expected cases of both scarlet fever and diphtheria	= 5.6
Actual cases	= 9.
Difference	= 3.4

* * *

"Conclusion: There is a significant positive association between tonsillitis and scarlet fever, but no significant association is shown between tonsillitis and diphtheria or between scarlet fever and diphtheria."

This analysis shows that the association of scarlet fever and diphtheria, and of tonsillitis and diphtheria is so close to the figures expected on the law of probability alone that no conclusion as to relationship could be drawn. On the other hand, the association of scarlet fever and tonsillitis in the same person is so much more frequent than the expected figure that a significant relationship between the two diseases cannot be escaped. The difference of 4.9 times the probable error in this group means that the chances of purely accidental (non-significant) association are less than 1 to 1000, a negligible figure.

COMMENT

It has been shown that there is a significant positive association between susceptibility to scarlet fever and to tonsillitis despite the fact that the streptococci concerned are serologically distinct; and there are clearly common factors which govern invasion of the lymphadenoid tissue of the throat by all of these organisms. If this is true, one is immediately confronted by the puzzling fact that, whereas scarlet fever is notably a disease which does not affect the same person more than once, acute tonsillitis par excellence recurs time after time. No final explanation of this apparent contradiction is at hand, but certain possibilities suggest themselves. It has been shown by various workers[15] that the Str. scarlatinae produces a soluble toxin in culture, that this toxin is associated with the occurrence of the rash and that the rash can be neutralized by convalescent or artificially produced immune sera. It is equally clear that this rash-producing substance does not represent the entire activity of the organism and also that immune sera which neutralize the rash do not obliterate the tonsillar infection or all the other evidences of scarlet fever.[16] In brief, the rash is the only clinical feature which enables one to distinguish between scarlet fever and streptococcic tonsillitis, and either entity may occur in mild or severe form (mild scarlatina, ordinary acute tonsillitis—malignant scarlet fever, septic sore throat). The question may be raised, therefore, as to whether, during an attack of scarlet fever, the individual becomes immune to the rash-producing "toxin" of Str. scarlatinae but remains susceptible to subsequent infection with the same organism, which would consequently manifest itself only by sore throat clinically indistinguishable from simple tonsillitis. If this is true, the facts would be in accord with the general relations between susceptibility to scarlatina and tonsillitis, which were pointed out above.

The question is capable of proof by inoculation of the throats of volunteers who have had scarlet fever with strains of known scarlatinal streptococci. If these individuals are immune to the rash-producing substance but not to the other activities of the organism, one would expect tonsillitis without rash to result if any disease at all was produced. Unfortunately in the inoculation experiments of Dick and Dick, the crucial point of whether there was a past history of scarlet fever is not noted. None the less their observations are of interest in this connection. Thirty volunteers were subjected[11] to throat swabbing with eighteen strains of hemolytic streptococci isolated from the throats of typical cases of scarlet fever during the early stages of the disease. Of these thirty experiments twenty-three were entirely negative, but seven of the volunteers developed tonsillitis with fever and leukocytosis but *without rash*. Later Dick and Dick[5] inoculated in a similar manner five volunteers with a culture from a case of scarlet fever. Three of the experiments were negative; of the two other volunteers one developed typical scarlet fever with characteristic rash, and the other developed a tonsillitis with fever of five days' duration but *no rash*. Here again there are unfortunately no data as to previous history of scarlet fever. Even more suggestive are the recent observations of Stevens and Dochez,[17] who in studying the streptococci isolated from cases of sore throat without rash which occurred in connection with an outbreak of scarlet fever, found that these strains in certain instances were capable of producing toxin which was neutralized by scarlatinal antitoxin and were agglutinated by scarlatinal immune sera. Although no data as to clinical history of scarlet fever are set down, all the cases of angina without rash from which scarlatinal streptococci were isolated had negative Dick tests, *i. e.*, were immune to scarlatinal toxin. Stevens and Dochez have therefore shown that people who are immune to the "scarlatinal toxin" as evidenced by the skin test are none the less susceptible to infection by Str. scarlatinae, but that in this case there develops a tonsillitis without rash.

Rosenow[18] observed five instances of severe streptococcal angina without rash, all of which, according to a specific precipitin test, were due to scarlatinal streptococci. In every case the Dick test was negative, and two of these people gave a history of previous attacks of scarlet fever. Rosenow concludes that the supposed immunity following an attack of scarlet fever may really be an immunity of the skin to the rash-producing toxin without protection against subsequent invasion by scarlatinal streptococci of other tissues such as the tonsils, and in support of this view he refers to attacks of high fever, sore throat and otitis media, without rash, but due to scarlatinal streptococci occurring in several children within a month after typical attacks of scarlet fever.

The recent observations of Nicholls[19] are along the same lines. The whole matter is complicated by the fact that clinically the rash is of variable

intensity even in first attacks of scarlet fever, and that the degree of toxin production by scarlatinal streptococci is also variable.

The studies of Blake and Trask[20] are of importance in this connection. They showed that the amount of "toxin" present in the blood (determined by skin tests of non-immunes with serum from scarlatina patients) did not run parallel with the clinical severity of the disease. A case classified as extreme, for example, had only one-fourth of a skin-test dose of toxin per cubic centimeter of serum, whereas a mild case had 120 such units per cubic centimeter. On the other hand, as one might expect, the degree of "toxemia" bore a distinct relationship to the presence of the rash.

In the light of these observations it becomes clear that the only proven specific activities of scarlatinal streptococci are the production of the scarlatinal "toxin" and the associated rash. Conversely it has not been shown that specific scarlatinal antitoxin has any action beyond neutralizing the toxin and eradicating the rash or preventing its appearance. The question of resistance to invasion by hemolytic streptococci and resistance to activities of these organisms other than those related to toxin production seems to require separate consideration. The observations herewith presented indicate, at any rate, that invasion of the lymphadenoid tissues of the throat by scarlatinal, as well as other hemolytic streptococci, depends on some common factor of susceptibility.

CONCLUSIONS

1. Certain people possess a "natural" or at least unexplained resistance to hemolytic streptococcal infection of the lymphadenoid tissues of the throat.

2. There is a significant positive association between susceptibility to two types of infection of this sort—acute follicular tonsillitis, and scarlet fever.

3. There is no significant association between susceptibility to tonsillitis and diphtheria or to scarlet fever and diphtheria.

4. The implications of this observation in relation to epidemiological data are discussed.

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DISCUSSION

Karl F. Meyer, Ph. D. (Hooper Foundation for Medical Research, San Francisco)—It is indeed a privilege to be asked to discuss the valuable paper of Doctor Bloomfield. No one is better qualified to unravel the many perplexing features of scarlet fever and tonsillitis than the author of the paper. Since I am fully in accord with the conclusions presented, I have very little to add. I wish to express my appreciation for the many suggestions and stimulations I derived from reading the fascinating studies and reports which Doctor Bloomfield and his associates made a few years ago on the epidemiology and bacteriology of acute tonsillitis, formerly considered a disease from within and due to a variety of bacteria. It is now proved beyond a doubt that acute tonsillitis is a streptococcic infection contracted by those endowed with a peculiar innate susceptibility. Tonsillectomy or vaccination confer a considerable degree of protection. Massive infections, usually milk-borne, may cause a very severe disease known as septic sore throat. As far as bacteriological studies have progressed, the beta hemolytic streptococci isolated from the cases do not differ from those found in acute tonsillitis or from those of scarlet fever. In order to protect the milk supply from human beta hemolytic streptococci it is naturally advisable to determine the carrier incidence among the employees of the dairies. It has been suggested that they be immunized against the scarlet fever toxin. Since I was familiar with the studies conducted by Doctors Bloomfield and Felty I advocated tonsillectomy or, instead of protection against the rash-producing toxin, repeated vaccination with a polyvalent beta hemolytic streptococci vaccine. This procedure will be tried out in the very near future. A subject which deserves further study is the periodic recurrence of seasonal tonsillitis with a marked tendency to otitis media.

❦

Edwin William Schultz, M. D. (Stanford University)—There is really nothing I can add to Doctor Bloomfield's stimulating and valuable paper. We no longer entertain any doubt as to the specific relationship of streptococci to acute tonsillitis; and the etiologic relationship of streptococci to scarlet fever seems well established. It is also known that, quite apart from a history of previous infection, individuals may differ in their resistance to given infectious diseases. Although we know that these individual differences may be determined by a variety of factors, they are probably determined in part by inherent differences in the germ plasm and are therefore a matter of inheritance. We are indebted to Doctor Bloomfield for calling our attention to the remarkably close correlation of individual susceptibility to acute tonsillitis and to scarlet fever. It is not at all improbable that individual susceptibility to streptococcus infection is in a measure at least traceable to cellular differences which the individual owes to his parents. Such individuals might conceivably recover from a streptococcus infection with a well-defined immunity to the toxins of the organism, but with an essentially unchanged resistance to the organism itself. It is recognized that an antitoxic immunity may exist quite independently of

an immunity directed toward the elimination of the organism. We know, moreover, that an antitoxic immunity, once established, is a dependable immunity of long duration. This is often not the case in an immunity in which the resistance rests on a disposal of the organism. Indeed one cannot be too careful in evaluating the degree of protection afforded by antibacterial immunization.

R. W. Burlingame, M. D. (Isolation Hospital, San Francisco)—Doctor Bloomfield's worthy paper has been the means of crystallizing at least three ideas in my mind:

1. That many cases of tonsillitis are caused by the streptococcus scarlatinae in individuals who have enough antitoxin in the blood stream (natural or acquired) to block the symptoms caused by the toxin generated by this streptococcus; that the scarlatina streptococcus has at least two distinct actions is very patent to one who has used in a series of cases the antitoxin in the treatment of scarlet fever. Within a few hours after the administration of antitoxin, especially intravenously, the temperature drops to normal and the rash fades. But the sore throat remains and later the various complications as otitis, adenitis, and even septicemia may occur because of the fact that the antitoxin is not bactericidal in its action. We have here an analogy with diphtheria antitoxin in which the constitutional symptoms are relieved by neutralization of the toxin, but in which the carrier state may persist for months. However, the diphtheria bacillus is not so great an irritant to tissue as the streptococcus. But I have seen children with an excoriating nasal discharge from which a pure culture of Klebs-Loeffler bacillus was obtained, who had a negative Schick, and who, as may be expected, were not relieved by antitoxin. In these cases the inflammation clears only on application of local antiseptics.

2. That we may expect to see scarlet fever recur in the same individual as the use of scarlet fever antitoxin becomes more general. Just as in diphtheria, the antitoxin is administered early in the disease and, therefore, the toxin is neutralized before it has had time to stimulate an active immunity. The passive immunity thus furnished by the antitoxin passes away in a few weeks and leaves the patient as susceptible to the toxin as before.

3. That from an epidemiological standpoint a rapid, simple method of taking, transporting, and growing the streptococcus scarlatinae should be worked out. In this way negative cultures may be the criterion for the discharge from quarantine, rather than the uncertain time limit imposed by health authorities.

CANCER OF THE UTERUS*

By Edward N. Ewer, M. D.
Oakland

Discussion *by Emil G. Beck, M. D., Chicago; Thomas O. Burger, M. D., San Diego.*

SOME twenty years ago a woman with a lump in her breast, through fear and suspicion of its nature, concealed it from her family until it had grown to alarming proportions. Her husband was manager of a great corporation. That is mentioned because it was indicative of possession in the family, of more than average ability and intelligence. He asked what surgery offered and was told he could expect about a fifty-fifty chance for a five-year cure. That was an overgenerous prognosis, but he decided a 50 per cent chance for only five years more of life was not attractive, so he consulted a friend who was president of a bank. Here also one would presuppose a fairly good intelligence quotient, but the financier propounded this moronic gem: "If you want corn to grow well you hoe it, don't you? Well that is what the surgeon will do with the cancer when he operates upon it." So the corporation manager took his wife to an irregular cancer cure institution where he was shown through a sort of museum of cancers. It was pointed out that they looked like crabs with many legs, and that in fact the word "carcinoma" was derived from the Greek word meaning crab. The showing was impressive and the promises for cure satisfactory. So the corrosive material was applied, and the woman was tortured with a suppurating sore that covered the whole front of her chest until she died a year later.

It must be acknowledged that the entire series of events just narrated could all happen today, for we still have nothing to offer for the permanent cure of cancer.

People are psychologically deaf to unpleasant truths, the promises of the quacks are alluring and in the presence of the impending cancer calamity the afflicted grasp at straws.

The history of the patient just referred to illustrates the whole adverse psychology in the cancer treatment situation, from the standpoints of both physician and patient. If the physician tells the truth he makes a poor showing; if he does not, he places himself in the class with the fakers.

EDUCATIONAL CAMPAIGN AGAINST CANCER

Writers on the cancer problem are always urging educational campaigns designed to get the patient to the surgeon early, the teaching being that the neoplasm is local in the beginning and can then be removed *in toto*. But are we sure of that? I am not arguing against the effort to aid these patients early; in fact that is our only hope today. But I am pointing out what a weak hope it is. Perhaps cancer is not a local disease in the beginning, or if it is it may be the response of a constitutional tendency only waiting for an adequate irritation to start its further development. We have all had patients whom we thought came to us early enough to warrant great expectations from surgery, only to be disappointed. Here are some examples:

Case 1—A patient had a small fibroid nodule high up in the uterine cavity and beside it a tiny spot from which positive sections were made. The rest of the uterus was examined carefully; many sections were made, but the one small spot was all that was found. It was adenocarcinoma of the body of the uterus, universally conceded the most amenable to surgical treatment, but this patient died with massive pelvic recurrence within eight months after the operation.

Case 2—I excised quite widely two lumps smaller than peas, not in the gland but just under the skin at the periphery of a breast. The pathologist reported malignancy. A radical dissection of breast and axilla was promptly done. The patient died six years later of extensive skeletal cancer, pelvic bones, spine and skull being involved.

Case 3—In further contrast another patient with cancer of the uterine body lived six years after hysterectomy without recurrence, and died of apoplexy.

An explanation of this difference in behavior is Broder's discovery that the extent of differentiation of cells in any neoplasm determines its viru-

* Read before the Alameda County Medical Association, September 19, 1927.

lence. Broder states that "a number of carcinomas, by the process of differentiation, put the brakes on themselves, so to speak"; and that, "a carcinoma whose cells increase by geometrical progression without differentiation beyond the point of reproduction, would grow faster and be more malignant than one that caused a number of its cells to differentiate beyond the point of reproduction." So Broder's Group 1, with 100 to 75 per cent differentiation or self-control, shows excellent results with operation; while his Group 4, with little or no differentiation, shows an almost hopeless degree of malignancy no matter how treated or when.

ACCEPTED FACTS CONCERNING CANCER

The fact we think we know best about cancer is that a preexisting long-continued irritant lesion is necessary, and that the neoplasm begins at such a point. We do not know why the same lesion will start trouble in one individual and not in another.

If cancer is a local disease due to a wearing down of cell energy through long-continued efforts to replace tissues destroyed by the irritant, then it would seem that surgery and all other present methods of extirpation have about reached their limit and the future is hopeless. On the other hand if cancer is a systemic disease, infectious perhaps, there are strong hopes for the discovery of an efficient remedy.

While Broder's cell differentiation theory of the grades of malignancy is useful for prognosis, it gives as yet no clues for improvement in treatment. The members of all four groups listed by him die eventually. If the agency which causes the cells to differentiate can be found and harnessed and made to work 100 per cent, the resulting complete differentiation beyond ability to reproduce would mean cure.

While it is desirable for the lessening of technical difficulties to continue the propaganda of education so that patients will apply early for surgical extirpation, I have little faith that it will improve the situation much.

THE FIELD OF THE PRECANCEROUS STAGE

A more promising field now neglected lies in the precancerous stage during which the surgeon should be persuaded to operate. Pick and Hansemann deny that there is a recognizable precancerous stage. Granting that, we still have some facts to guide us in the handling of certain lesions.

We know the danger for the future in gastric ulcer. Moynehan and many others treat ulcers by partial gastrectomy to eliminate the danger of later carcinoma.

Erosions of the cervix and cervical polyps in the cancer age are portents of evil and should be treated surgically. They cannot be cured by office applications of iodin and silver salts. An intractable cervical discharge as the menopause approaches is not too radically treated by hysterectomy. Crile advises and practices it. Such a discharge is an unmistakable sign of irritation in a most vulnerable spot. But we can follow the physician back much further in educating him in cervix cancer prevention. There is less to be gained I believe in scolding the public for its fear of the knife than there is in persuading the obstetrician to make immediate cervical repairs, and the surgical gynecologist to treat vigorously all cervical erosions and cystic degenerations.

Immediate repair of the lacerated cervix is difficult because the parts are obscured by blood and because of their distortion after delivery. If accurate coaptation cannot be made it is better to adopt Hirst's plan of doing the repair a week after delivery. In any event the repair surgery must be done very carefully or the result may be as dangerous as no repair at all. Scar tissue as such in the cervix probably does not predispose to cancer. If, however, the scar is badly made it may have the effect of sealing up gland ducts and converting them into cysts just as an erosion does. An erosion is cervical mucous membrane everted into the vagina by a laceration, and when all or some portion of it is healed over by the extension of squamous epithelium, cervical gland ducts are closed and cysts form. This condition is generally believed to be a more dangerous irritant than scar tissue. Hence erosions should be treated surgically and the whole gland-bearing area gotten rid of. The Sturmdorf operation well performed will do this, and so will cauterization.

Of course with the sorry means at hand to cope with cancer of the uterus, the earlier that destruction of the macroscopic growth is accomplished the better. The hope is that each case belongs to Group 1 and not that, being a local disease we may remove it in its entirety and thus effect a permanent cure. Even if it is a strictly local lesion we discover it in that stage only by chance. If the patient seeks advice when the first symptoms appear the carcinoma is still advanced almost beyond hope, because bleeding is the first symptom and bleeding means ulceration.

CANCER OF THE CERVIX

The surgical treatment of cancer of the cervix probably reached its highest point of efficiency and popularity about the year 1913, when Wertheim reported 46 per cent of five-year cures by his method of total hysterectomy with wide dissection of the parametrium. His operation involved isolation of the ureters, the tying of the uterine arteries as far from the uterus as possible, and the removal of as much of the infiltrated parametrial tissue as possible.

This treatment of the ureters was followed by a serious cystitis in many patients, and the operative mortality was 15 to 20 per cent. It must be remembered that only about half the patients presenting themselves at the Vienna clinic were considered operable, so the 46 per cent of five-year cures represented the results in selected cases.

Some recent statistics run as follows: Of 4982 cases from German and American clinics, 1989 or 39.9 per cent were considered operable, and 1692 were actually operated upon. Three hundred and thirteen succumbed to the operation, making an operative mortality of 18.5 per cent. Of the 1379 surviving patients 317, or 23 per cent, were alive five years later. This leaves only 6.4 per cent five-year cures out of the whole number of 4982

patients who presented themselves for treatment. There were eliminated at once 78 per cent of the total number, composed of 60 per cent inoperable and 18 per cent who died from the operation. This is a very poor showing for surgery. Decisions as to operability rest somewhat with the boldness of the operator. If he is looking for a high percentage of five-year cures his percentage of operability must be kept well down and large numbers will be denied operation. In deciding upon operability knowledge of the lines of extension of the various forms of uterine cancer is necessary.

Cancer of the vaginal portion of the cervix grows as a cauliflower mass in the vagina, infiltrates the submucous tissue or produces an ulcerating funnel-shaped cavity or a flat ulcerating surface. All these forms extend along the surface toward and into the vaginal walls or underneath them, breaking out in ulcerations as the infiltrating nodules advance through the vaginal mucosa. The extension does not go along the surface of the cervical canal. The body of the uterus is attacked only in the very last stages. The tissues of the parametrium are reached from the lowest part of the supravaginal portion of the cervix, or the vaginal wall, by lymphatic drainage. The bladder and rectum are not involved till quite late, and the lymphatic glands affected are the hypogastric and iliac. Metastasis to various internal organs takes place very late.

Cancer of the cervix begins in the mucous membrane of the cervix, infiltrates and ulcerates, and extension takes place along the surface toward the uterine cavity and not toward the vagina. The body may also become involved through extension in the substance of the uterus. The only way the vaginal walls take part in the process is from extension in the submucous tissues, never as a surface extension. The pelvic connective tissue becomes involved through direct extension from the periphery of the cervix along lymphatic channels, and forms the infiltration mass felt on palpation through the vagina or rectum, the recognition of which is so important in diagnosis. One rarely sees the patient until this parametrial extension has taken place. The bladder becomes involved early, the rectum late and the iliacs are the first lymphatic glands to suffer.

CANCER OF THE BODY OF THE UTERUS

Carcinoma of the body begins in the mucous membrane lining the cavity of the uterine body, and may be diffuse, involving the whole mucosa, or circumscribed or polypoid. The diffuse variety is the only one which may spread beyond the internal os into the cervix. As a rule all the varieties are arrested at the internal os. Extension by infiltration of the walls of the uterus takes place very slowly, and the inflammatory reaction in advance of this causes much thickening. Finally the peritoneum over the surface of the uterus becomes diseased. The parametrium is affected late as are the bladder and rectum. The glands involved are the lumbar group, on the vertebral column about the aorta. Sometimes the inguinal glands become infiltrated or inflamed, through extension along the lymphatics which accompany the round ligaments.

Considering these lines of extension it is readily understood why cancer of the body of the uterus gives the best results by surgical treatment, and why cancer originating in the mucosa of the cervical canal is worse than that of body or portio, Broder's malignancy group being the same. In fact it is usually stated that over 60 per cent of the simple hysterectomies for adenocarcinomas of the body result in five-year cures. This is so satisfactory that it is generally agreed operation is the treatment of choice for cancer of the body of the uterus.

There are two other methods of treatment which take no account of operability or inoperability; nearly all cases being acceptable for treatment. These two methods are treatment with the actual cautery and with radium.

CAUTERY TREATMENT

Thorough cauterization from below is attended with a considerable number of fistulas, and if combined with the Wertheim hysterectomy an added mortality of some 20 per cent must be expected. If the cautery can claim a higher percentage of cures than other methods, statistics to prove which are not available at present, that of course will outweigh the immediate mortality hazard.

So those who have the temperament which permits them to face a 20 per cent immediate mortality with equanimity may choose to operate with the knife or cautery. As radium treatment is attended with practically no mortality, I am in favor of that agent for the treatment of cancer of the cervix and portio. I would still do simple hysterectomy for cancer of the body, for that involves no great operative mortality, and radium probably offers no better prospects.

RADIUM TREATMENT

The results from radium in the cervix cases will probably be improved as methods become more standardized. In this country it is generally considered best to give one large dose and no more. Some wait till the immediate radium effects are over and then operate. This interval is important, for the tissues after radium contact are in no condition for immediate operation. These radium changes are described by Farrar:

1. A stage of hyperemia most pronounced one week after the radium application. The tissues are red from engorgement of the blood vessels.

2. A stage of slough. Three weeks to one month after irradiation there is sloughing of the cancer tissue, greenish in color, and there is a foul discharge. This sloughing stage in some cases may be over in a month and the necrotic tissue separated and discharged, but sometimes it is present for two months. Certainly operation is not safe till this stage is passed.

3. A stage of healing, which is complete in two to three months. The slough has disappeared and the cervix is clean, dusky red in color, somewhat glazed, but with no evidences of carcinoma.

4. A stage of contraction. During the fourth month the tissues of the cervix and vaginal vault begin to contract because of the formation of con-

nective tissue which irradiation excites. It suggests the senile changes which one sees in the cervix and vagina in old women. Sometimes the tissues of the cervix are so shrunken and obliterated that the appearance is like that of an amputated cervix. Sometimes these changes completely close the internal os and a pyometra or hematometra may occur. The patient complains of uterine cramps and looks septic. A gentle dilatation is followed with evacuation of the fluid and immediate improvement in health. Sometimes during this stage, improvement is arrested, with the appearance of little nodules in the cervix or vaginal vault, which must be treated with a radium needle or two.

Finally when serious recurrence takes place it is usually in the tissues of the pelvis and glands above the area irradiated along the lines of extension already described. Only occasionally is death due to metastasis in distant organs. In that respect cancer of the uterus seems to behave differently from cancer of the breast which often recurs in the liver, bones,, and other organs far removed from the original site.

COMBINED RADIUM AND SURGICAL TREATMENT

There is difference of opinion over the question of adding operation to the radium. At the Mayo clinic Bowring says they are not now performing the more radical operations of the Wertheim type. They use radium in small broken doses, 50 mg. at intervals of three or four days, and operation if thought advisable is delayed for about six weeks or longer till the area is healed and all gross evidence of carcinoma gone. Crile has ceased operating and uses 100 mg. of radium in the cervix for twenty-four hours. That was also John G. Clark's method. Most of the gynecologists at the Woman's Hospital in New York do the same, and that is the method at the Memorial Hospital, with the addition of their radium bomb and low voltage x-ray after-treatment.

Bowring, and Healy of the Memorial, both say that when hysterectomy is done after a proper application of radium, it is unusual to find in the specimen any microscopic evidence of cancer; and Healy goes on to say, "With this evidence in hand, it is difficult to understand why these patients should any longer be subjected to a dangerous surgical procedure for the removal of an organ which has been purged of its disease by previous irradiation. If the irradiation has been effectively carried out, the subsequent operation is unnecessary and may be harmful, whereas if the irradiation has been ineffectively instituted then the operation is useless, as experience has shown, for the cancer rapidly recurs in the parametrium."

The low voltage x-ray therapy is added because it is hoped it may reach some cancer cells too far away for penetration by the radium rays. Healy thinks it has improved their results.

THE RADIUMHEMMET OF STOCKHOLM

This is not the opinion of Heyman of the Radiumhemmet in Stockholm, who states: "We have abandoned the combined radium-roentgen treatment, since we have found that the results were not better, but rather worse than with radium alone. Nowadays we resort to roentgen treatment in conjunction with the first series of radium treatments, only in those cases in which there are extensive glandular metastases from the very start." He adds that they treat recurrences in the parametria with roentgen rays, and also similarly treat patients who have severe pains which persist in spite of radium treatment. They are opposed to the massive doses of x-rays, using one-half to one-third of a skin erythema dose, daily or every other day.

The Radiumhemmet is a hospital founded by the Swedish Cancer Research Society and is partly supported by government grants. It is conducted by Gösta Forssell, who introduced radium into Sweden about 1910, and the gynecologic work is now done by James Heyman. During its first years of operation it was Forssell's idea that only inoperable cases should be treated. "The radiological treatment was to be extended to operable cases only when the results justified such procedure." In 1920 they made their first report and the results were so good that many leading gynecologists and surgeons of Sweden ceased operating for cancer of the cervix. Since that time the hospital has accepted both operable and nonoperable cases. Cases with metastases in glands and vaginal walls, bladder or rectum, are classed as inoperable. In 1915 their inoperable plus borderline cases were 97.5 per cent; after 1918 the addition of operable cases reduced this percentage till in 1921 it was 63.5 per cent. A remarkable thing about this institution is that their organized control of the patients is so thorough that the follow-up is 100 per cent perfect. It is inspiring to visit a clinic which through the enlightened policy of a benevolent government has not lost sight of a single patient since its beginning. The Swedish government pays the traveling expenses of poor patients to and from the institution. In the eight years, 1914 to 1921 inclusive, 505 patients were treated for cancer of the cervix. One-fifth of the patients were under forty years of age.

It has been noted by various investigators that cancer of the cervix in those under the age of forty is on the whole less favorable for treatment. Of all cases, 20.5 per cent were free from symptoms after five years. Segregating those classed as operable or borderline, 40.5 per cent were free from symptoms after five years.

This represents about the best that radium can do at the present time. It offers hope for those the surgeons reject as inoperable, namely, about 60 per cent; it accomplishes about the same percentage of five-year cures in those classed as operable. Last but not least, it has an operative mortality of only 1.9 per cent as against 18 or 20 per cent for surgery.

Radium treatment causes very little discomfort to the patient and only a day or two of hospitalization. Even the anesthetic can be eliminated in many cases.

Much more could be said about the technique of radium application, but such a discussion would

be material for a long paper in itself. One finds a good deal of difference of opinion regarding dosage, screening, and other factors, in the various clinics; and it involves a good deal of study and sifting of data to decide upon the most effective manner of radium employment. There are some points in this Stockholm method which impress me beyond what I have seen in other places. At Stockholm they prefer three treatments to the one which is customary in America. There is the initial application followed by another in one week, and a third three weeks after the second. They filter through lead, which is not customary in many clinics. The total dosage after three applications is from 2220 to 2640 milligram hours in the uterus and about 4500 milligram hours in the vagina. I am convinced that much of the lack of confidence in radium is due to inadequate study of technique. Radium therapy merits as much attention as do the details of complicated surgical procedures.

251 Moss Avenue.

DISCUSSION

Emil G. Beck, M. D. (2551 North Clark Street, Chicago)—In this paper are expressed the most modern views on the treatment of cancer of the uterus.

Doctor Ewer emphasizes our limitations and his conservative attitude toward useless surgery.

Radical surgery, such as the Wertheim operation, is not so popular as it was before radiotherapy had demonstrated its usefulness.

I approve very much the combined treatment, namely, surgery plus radiotherapy. When the growth is confined to the uterus, and the adnexa are not involved, an extirpation is the most logical procedure. If the cervix alone seems to be involved, the removal of the cervix with subsequent treatment by radium will probably be the safest procedure.

Radium is especially advantageous in the treatment of carcinoma of the uterus because the growth is, so to speak, external; in other words, it is accessible to the direct contact of the radium with the growth proper, similar to epithelioma of the lip. Radiotherapy is efficacious only when applied by a competent radiologist who is also familiar with pathology. Haphazard application of radium or x-ray does more harm than good.

It is often difficult to make a correct diagnosis of a beginning carcinoma of the cervix without making a biopsy. Usually when an ulcer does not respond to local treatment, such as silver nitrate application, it should be looked upon with suspicion and a biopsy made and treatment instituted in accordance with the pathological report.

The paper offers many valuable suggestions in the treatment of cancer of the uterus.

❊

Thomas O. Burger, M. D. (1301 Medico-Dental Building, San Diego)—I wish to compliment Doctor Ewer on his progressive and erudite paper.

Broder's classification has been an aid in prognosis and more scientific treatment. It warrants more study than it is usually given. Many communities lack the laboratory skill it requires. Routine diagnostic curettage in suspected cases is imperative. Following this procedure insertion of the element tandem serves the best interests of all. If the microscopic picture shows no evidence of malignancy and the condition is one of chronic metritis, then bleeding has been controlled. Whatever the degree of malignancy, tendency to extension and metastasis has been markedly lessened. Further surgical procedures, if contemplated, may be carried out with a greater margin of safety.

The predisposing rôle of inflammatory lesions of the cervix to malignant changes is well established. I am a staunch advocate of cautery treatment in these cases. There is no better means of destroying the infected glands and unhealthy epithelium. The scar tissue replacement which takes place leaves poor soil for malignant changes. In early neoplastic lesions of the cervix, removal of the glandular area by a combination of cautery and radium application has given satisfactory results. If plastic work is indicated, I have obtained excellent results with Sturmdorf's operation performed with a fine actual cautery tip or the endothermy knife.

Although it has been frequently brought to the attention of the profession, postpartum care of cervical injuries is far from satisfactory. Too often, as Doctor Ewer states, more harm than good is done by some bizarre repair.

I cannot express myself strongly enough in favor of radium therapy for treatment of any malignant lesion of the cervix. The mutilating operations of past years with their doubtful curative value, frightful mortality, and invalidism have no place in modern treatment of this condition. Radium is safe in application; has a negative mortality; a larger per cent of cures; and, certainly in hopeless cases, gives greater comfort and longevity than any other method at our disposal.

In malignancy of the corpus uteri, according to the microscopic picture, I prefer the combined treatment; that is, insertion of the radium tandem, giving 3000 milligram hours after diagnostic curettage, followed by panhysterectomy in a month or six weeks' time. In this regard, and in support of Polak's views that general anesthesia in part lowers resistance and favors extension of the malignant process, I have for some time used spinal anesthesia. This anesthetic properly administered and controlled is absolutely safe, and is regularly followed by the most favorable convalescence. In many of the severer cases, transfusion of whole blood makes these patients infinitely better surgical risks. I have also found that after radiation and before operation, catheterization of the ureters with the usual opaque x-ray catheter is very helpful in preventing injuries in the presence of altered anatomical relations.

THE SURGICAL PROSTATE*

By Louis Clive Jacobs, M. D.
San Francisco

Discussion *by Chester H. Woolsey, M. D., San Francisco; L. R. Reynolds, M. D., San Francisco; George W. Hartman, M. D., San Francisco.*

A SURVEY of 209 suprapubic prostatectomies at the Mount Zion Hospital, San Francisco, with eleven deaths or a mortality of less than 5½ per cent, reveals a large number of postoperative complications. These complications are the factors that contribute to stormy convalescences and slow recoveries.

HEMORRHAGE

The greatest contributing factor to poor results is hemorrhage; either immediate at the removal of the gland or at any time subsequent thereto.

In the above survey there were eight cases of postoperative hemorrhage. I have no record of the number of bleeders nor of the quantity of blood lost at the operating table.

I had one death as the direct result of severe hemorrhage. Immediately following the enucleation blood welled up into the bladder as rapidly as gauze packs were applied. With the use of the

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*Read before the Urology Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

suction apparatus and retractors a bleeding vessel was located on the anterior upper aspect of the torn capsule. Following ligation the hemorrhage ceased; but the patient was in such a very poor condition as a result of the loss of this large quantity of blood that he succumbed in a few hours.

One other case may be cited:

Mr. E. L., age 60, was operated upon January 21, 1925. No unusual bleeding at operation. Nevertheless the prostatic area was packed with about four yards of three-inch packing. On the whole his condition was remarkably good, his pulse being 90 per minute at the conclusion of the surgery. Seventy-two hours later, at 10 a. m., the gauze was removed. At about 2 p. m. the patient's bowels moved. This was followed by severe hemorrhage, the pulse becoming rapid and weak. The house surgeon injected horse serum and introduced adrenal solution into the bladder. These procedures checked the hemorrhage, but left the patient in a very weakened condition. At 6 p. m., though there was no bleeding and the drainage was excellent, the patient became dyspneic with air hunger, the pulse became rapid and thready, death occurring at 6:55 p. m.

Postoperative hemorrhage usually occurs within the first twenty-four hours or from five to ten days later. It is rare that the removal of the prostate is accompanied with but little bleeding. Today all authorities are agreed that hemorrhage is the most important complication in prostatectomy. We are dealing with old men, with whom we have used every available method to build up and increase resistance. At best, they have only a limited amount of reserve power, and when these older men lose blood, no matter how little, it weakens their vital forces and lowers their resistance and, to my mind, accounts for their susceptibility to postoperative complications and slow recovery.

Bleeding during prostatectomy is due to the following conditions: from the lacerated edges of the capsule when the enlarged gland is dissected free; from a lacerated sphincteral muscle, which prevents the proper contraction of the bladder neck and cessation of the oozing; from the breaking into the plexus of Santorini by the operator; or to a varicosity on the upper urethral wall.

In my collection of cases, those large prostates that grew up inside the roof of the trigon are the ones that produced the most hemorrhage, the oozing being greatest from the posterior lip of the freed capsule. These are the cases in which, with proper retraction and extreme Trendelenberg position, a suturing of the torn posterior capsule is required.

Secondary hemorrhage may occur at any time, though usually it occurs from the fifth to the tenth days. It is often brought about by straining upon the part of the patient; by a hypocoagulability of the blood or a dislodgement of a blood-clot. It is not an infrequent occurrence after the enucleation of a large prostatic tumor to have no immediate hemorrhage, but within the first hours following the operation to find a most alarming hemorrhage. This has at times occurred with the removal of the gauze utilized in packing the pouch.

MEASURES OF PREVENTING HEMORRHAGE

To decrease the morbidity attendant upon prostatic enucleation it is important to conserve the patient's blood, and one must routinely consider the coagulability of the blood in the preparatory stage of our prostatectomies. With the general routine blood examinations, the clotting time should be taken, and if found prolonged the patient should be given 10 cc. of 5 per cent calcium chlorid intravenously and three or four whole blood intramuscular injections of 20 cc. each. If the clotting time be normal, then preliminary to the operation, 10 to 20 cc. of whole blood should be given intramuscularly, and if the operation is followed by oozing, both whole blood and calcium chlorid should be given. If it be impossible to obtain other than the patient's own blood it should be withdrawn and reinjected intramuscularly. This procedure increases the coagulability of the blood and lessens the tendency to hemorrhage.

The clotting time of the blood is the time necessary to clot blood which has been drawn into a capillary tube. Every twenty seconds a small portion of the capillary tube is broken off. As soon as thin strands of fibrin are seen the time is noted. This is considered the clotting time, and normally it is about five to seven minutes.

There is a physiological complex present in the circulating blood, of which the controlling factors are: fibrinogen, parathrombin, antithrombin, and calcium. The disintegration of the blood platelets, which takes place in the clotting of the blood, is dependent upon the liberation of thromboplastic material. In the presence of thromboplastic material in the tissues, the antithrombin of the blood is liberated and this activates the parathrombin, which, combined with calcium, converts the fibrinogen into fibrin, producing the clotting.

Researches on the coagulation time after prostatectomy revealed that there is first a period of hypocoagulability lasting four to five days. This is followed by a phase of hypercoagulability which reaches its maximum toward the eighth or tenth day. Coagulability becomes normal again toward the third or fourth week after operation. These phases of hypocoagulability have been attained by experiments conducted by Legueu, Garcin, and Decourt, all French surgeons, who advocate the following: intramuscular injection of 10 cc. antihemorrhagic serum and intravenous injection of 20 cc. of 5 per cent calcium chlorid, twenty-four hours before operation. The latter injection is repeated on the morning of the operation. Claim is made that with this technique the loss of blood is very small and there is no secondary or late hemorrhage.

I would suggest an improvement, by substituting whole blood injections in place of other thromboplastic material.

During the last ten years, in the surgical department of Mount Zion Hospital, numerous forms of thromboplastic material were used for hemor-

rhage resulting from hypocoagulability of the blood, but it was ascertained clinically that with whole blood injections the results were better, and that at times whole blood injections have been almost miraculous as a life-saving procedure.

In the urological department at Mount Zion Hospital I have had frequent occasion to use it in obscure hematurias and the results have always been phenomenal. In the prostatic patients it seems to have other therapeutic actions besides stopping hemorrhage. It stimulates the pulse, increases its volume and likewise acts as a respiratory stimulant. There is no reaction after these injections nor any rise in bodily temperature; nor is there any pain accompanying these injections.

The technique is as follows: By means of a 23-gauge needle fitted to a 20 cc. Luer syringe, blood is withdrawn just as one does in taking blood for the Wassermann reaction. The needle is then changed to one of a 20-gauge size, and the withdrawn blood is injected into the gluteal region exactly like the routinely standardized intramuscular injections that we all use in the treatment of lues. One must work fast, for there is tendency for the blood to clot in from five to seven minutes.

It is self-evident that as a prophylactic for bleeding especial attention should be employed in the operative technique; utilizing that which will produce the least amount of laceration and tearing to the tissues and that which will allow the best and quickest exposure. Where deemed necessary, the two-stage operation is an excellent procedure, but I cannot agree with those authorities who claim there is less danger of bleeding in this form of procedure, even though their theoretical explanation in its favor is very excellent.

Massaging the prostatic capsule is an excellent procedure and many operators resort to this as a routine. There are but few operators today who irrigate with solutions to check hemorrhage. The majority pack with gauze, either the prostatic cavity or over the capsule of the prostate. Others utilize gauze impregnated with thromboplastic substances, such as kephalin, etc., or chemicals such as Monsel's solution or adrenal chlorid. Others again retract the bladder walls and, after getting the proper exposure, either ligate the bleeding points or suture the torn capsule. Some operators suture the torn capsule as a routine procedure.

Various methods of packing the prostatic pouch with gauze have been utilized—some use it as tampons, others pack it around urethral catheters, and others again use it in strips. There has been a great deal of objection to the use of gauze: on account of enhancing the danger of embolism; and adding to the frequency of hemorrhage which results from the gauze becoming saturated with urine and blood, when it would in part become loosened and would fall into the bladder, allowing the bleeding surfaces to rebleed. Others again suture the capsule over gauze packing. The embedding of fat in the cavity and also the use of the sponge-stick have also been successfully used.

However, at the present time the majority of operators are using an inflatable rubber bag on account of the objections to gauze—the large amount of gauze material necessary to secure absolute control of bleeding, the pain and unnecessary distortion of healing surface caused by its removal, and the need of greater security against late bleeding.

The ideal method of using gauze is to pack it around a sound inserted through the urethra into the bladder, and the slow removal of the sound allows the gauze to become firmly wedged into the operative field, stopping all hemorrhage.

FISTULAE

In the series of patients referred to in this paper, three patients developed suprapubic fistulae that would not heal. Two of these patients submitted to plastic surgery within six months following the initial enucleation; with the third, a year has already passed and he undoubtedly should be reoperated. In the two cases that I operated upon, I found present an eversion of the bladder mucosa with the outer coats cemented by direct union to the edges of the aponeurosis of the rectus. This was dissected loose. The bladder was sutured and inverted by means of a purse-string suture of chromic gut. After several weeks the patients were discharged as cured; and have had no subsequent trouble.

To guard against persistent fistula following prostatectomy, there should be no prolonged drainage of the space of Retzius. The lower angle of the bladder wound should be sutured, the drainage tube or gauze should be inserted high up in the bladder wall and should be removed in the course of three days. Systemic disease such as diabetes, lues or arteriosclerosis will delay healing. Likewise, where there is a persistent obstruction at the outlet of the bladder, such as is produced by remaining portions of unremoved prostatic tissue, healing will be delayed.

Reference to recent monographs upon the subject of prostatectomy gives evidence that persistent fistulae, though relatively a rare condition, occur oftener than is generally believed.

EPIDIDYMITIS

Epididymitis occurred in 12 per cent of the cases; and it was bilateral in 4 per cent. I do not use an indwelling catheter following prostatectomy, so cannot state whether the epididymitis was of traumatic etiology. However, I believe it to be the result of infection. Where compatible I advocate a double vasotomy to avoid the discomfort of this complication. In one patient, two months following his prostatectomy, I performed a double vasotomy and orchidectomy for bilateral epididymitis. At the present time his condition is excellent. Where it is impractical to perform a preliminary vasotomy, especial attention should be placed upon the proper support of the testes.

In this paper I have dealt with but a few of the very important complications of the surgical prostate. I have made no attempt to enumerate or classify the entire list of complications which have occurred in the above series of cases; but I

have endeavored to emphasize the importance of bleeding as a factor in morbidity and also the value of whole blood injections.

The value of bilateral vasoligation as a safeguard against epididymitis, is a mooted question. Though a chronic fistula is relatively rather rare, owing to the standardized technique in the operative procedure, there arises occasionally, nevertheless, the necessity for reopening the abdominal wound for repair of the fistulous tract.

462 Flood Building.

DISCUSSION

Chester H. Woolsey, M. D. (490 Post Street, San San Francisco)—In commenting upon Doctor Jacobs' comprehensive paper on the surgical prostate, I wish to speak only on that phase of it which pertains to postoperative hemorrhage, which, as the essayist states, is most responsible for poor results and sleepless nights.

Previous to my trip abroad last year I had many fixed ideas about postoperative complications following prostatectomies, and especially so concerning hemorrhage. These tended to produce a sense of dread and fear of postoperative hemorrhage. In my travels abroad last year I happened to spend a few weeks in London, and I took advantage of the opportunity to see the work of several prominent English urological surgeons.

At St. Peters Hospital for Stone, I saw Mr. Swift Jolly operate on several cases of prostatic hypertrophy. He did only the suprapubic operation. His preoperative technique was very thorough, occupying a week or more if necessary. Kidney function and blood urea especially were looked after. So far as I could learn he did nothing about the determination of blood coagulability. He told me he had no faith in agents given to promote blood coagulation, depending entirely upon his system of sewing up the torn capsule after enucleation of the lobes. He made an incision extending from the umbilicus to within a half inch of the pubis, and by means of a ring-shaped abdominal retractor (of his own invention), procured an admirable view of and access to the field of operation. Following a rapid enucleation of the two lobes he temporarily packed the wounds in the capsule with gauze and proceeded carefully to stitch up with a continuous, plain catgut ligature the entire bladder neck. This when completed gave a perfectly dry field, which could be seen admirably through the exposure which his ring retractor gave.

In commenting on his technique to a group of us, he told us he had used this method in all his cases for years and that hemorrhage once controlled in this way gave no after trouble. He sewed in a two-way drainage and flushing tube (also of his own invention), stitching close down to it. This he removed on the third day. He said that if his patient was not up and about on the tenth day he was mightily peeved and his orderly was in for a good grilling. I followed in the wards; three of his patients verified his statement. Two of the patients whom I saw him operate on had the very large type of prostate, both bleeding furiously following enucleation of the lobes. As I watched him in his slow deliberate manner mop and sew up, I wondered if the patient would not be exsanguinated, but soon he gave us opportunity to look in and see a tightly sewn and dry bladder neck.

L. R. Reynolds, M. D. (909 Hyde Street, San Francisco)—I wish to congratulate Doctor Jacobs upon his clear and concise presentation of these postoperative complications, and his suggestions for dealing with them.

Complications following the removal of the prostate gland are always disturbing and sometimes terrifying to those of us who do urological surgery.

Postoperative hemorrhage has always been one of the dreaded complications; especially when we used to enucleate the gland without exposure sufficient to see exactly where the bleeding was coming from. As the suprapubic prostatectomy is now done entirely under vision, it is fairly easy to stop the bleeding either by ligature, suture, or packing of the capsule. Occasionally the bleeding vessel is large enough to demand a ligature, but in most cases it is a general oozing from the plexus and can be controlled by a pack or inflated bag. I feel that it is the duty of the operator to stop the hemorrhage while he can see into the capsule and not partially stop it with a pack or hot compresses and then hope that some thromboplastic material will check the bleeding. Doctor Jacobs' practice of determining the clotting time is of great value, because it influences our prognosis if we know before operation that we are dealing with a hemophilic. We have found that by using a glass cystotomy tube we can remove the packing much easier and with far less pain to the patient than where a rubber tube is used. If there is serious bleeding following the removal of a pack I believe the patient should be reopened immediately and repacked before he has lost enough blood to jeopardize his recovery. We have used the injection of whole blood to arrest hemorrhage, but I would be afraid to put much confidence in it in a case that was actually bleeding.

Unless the patient refuses, we have been doing bilateral vasectomies routinely for two years and have had no cases of epididymitis in cases where the vasotomy had been done. I feel that this is the best method of preventing a postoperative epididymitis.

We rarely see a suprapubic fistula any more, and I think it is because operators are leaving the bladder orifice in much better condition, now that the work is done under vision. There are no obstructing tabs or bars left. I was particularly interested in what Doctor Jacobs had to say about suturing the lower angle of the cystotomy wound to prevent its becoming attached to the symphysis.

For some time we have been making our cystotomy wound transversely across the top of the bladder leaving a goodly portion of normal bladder wall between the cystotomy tube and the symphysis. This incision permits excellent exposure of the inside of the bladder without disturbing the space of Retzius; is easily sutured and precludes any possibility of the wound becoming attached to the symphysis.

George W. Hartman, M. D. (999 Sutter Street, San Francisco)—Doctor Jacobs' mortality statistics are very good. I think that all results are susceptible of improvement as surgeons learn the importance of the proper preparation of the patient.

As Doctor Jacobs says, we are dealing with old men with low resistance. In this type of individual a balance has been struck which enables him, in spite of various deficiencies, to get along. The imposition, however, of an unusual strain upon his organs, especially his kidneys and heart, is very apt to be a deciding factor against him. Therefore arises the extreme importance of careful study and preparation preceding operation. There should be no time limit to this. Where a week might suffice with one individual, months would be required for another. This preliminary period of preparation will uncover various weaknesses in the organs mentioned, all of which should be investigated to their fullest extent. The determination of blood coagulation time should be routine, for there are at present many means for reducing this if it is unusually prolonged.

One might say there are, roughly, two schools of suprapubic prostatectomists. The one, of which McKenzie of Montreal is a good exponent, believes in rapid enucleation, largely by touch; the other, as exemplified by Thompson Walker, believes in the visible enucleation. Each method has its advantages and disadvantages, but there can be no valid objection made to the disclosure of the operating field at the time of operation for the proper control of hemorrhage. If this could be done, then packing, bags, or other methods of hemostasis might be dispensed with to the

obvious comfort of the patient. I rarely find it necessary to use these measures; in this way relieving the patient of the tenesmus which is so apt to accompany the presence of a foreign body in the bladder. Freyer's method of massaging the capsule has always been very helpful.

In enucleation of the prostate careful placement of the finger between the capsule and the gland, careful adherence to this line of cleavage and gentle blunt dissection, rather than tearing, will do much to avoid hemorrhage. Early removal of the suprapubic drainage tube which previously has been secured tightly in the bladder so as to leave a minimum of free edges will obviate prolonged continuance of fistulae.

Doctor Jacobs' recommendation of brief drainage of the space of Retzius is of extreme value. Vasoligation and well-maintained support of the testicles are most effective in preventing epididimytis. This, however, cannot always be guaranteed, as it was the first complication which happened to me several years ago following an operation.

MOLLUSCUM CONTAGIOSUM*

By Hugo A. Kiefer, M. D.
Los Angeles

Discussion *by M. F. Weymann, M.D., Los Angeles; J. William Crawford, M.D., San Francisco; George H. Kress, M.D., Los Angeles.*

THE name molluscum contagiosum (molluscum epitheliale—acne variola forma) must not be confused with molluscum fibrosum or molluscum simplex, which represents an entirely different disease from that under consideration.

Molluscum contagiosum occupies a rather unique position among eye diseases on account of its extreme rarity. Because of this infrequent occurrence the writer wishes simply to present two case reports.

By reason of its contagious nature, one would expect it to be quite frequently observed, so its infrequency becomes a sort of paradox. Prof. Anton Elschnig[1] of Prague reports seeing four cases of molluscum contagiosum in ten thousand clinical eye cases. In over twenty years of private and clinic work the writer has seen but two cases.

ETIOLOGY

The disease may be defined as a contagious condition of the skin of the eyelids and face, running a subacute course, and characterized by small elevations of the epithelium, usually, but not always, having a central depression, and resembling somewhat the papules or umbilicated pustules of variola.

It attacks both sexes at all ages, but is most often found among people during the period of adolescence. The same type of lesion has been found on the epithelial structures of chickens and pigeons, as on the eyelids and beaks; and lesions histologically typical of molluscum have been produced by introducing material from the molluscum tumor into scarified areas of the combs of chickens. While the skin of the eyelids and of the neighboring facial regions are the usual sites of invasion, it does rarely attack the skin of any other part of the body, and sometimes the bulbar conjunctiva, and oral mucous membranes.

Inoculation experiments have been successful, and these, together with clinical evidence, fix the incubation period as ranging from a few weeks to three years. The last figure may seem questionable. Lyle B. Kingery[2] places the incubation period at twelve to twenty-one days, by intracutaneous injection in the human subject. It has been claimed that an organism belonging to the chlamydozoan group is the causative factor, exciting a hyperplasia of the epithelial cells, which subsequently undergo a metamorphosis and degeneration. J. Jackson Clarke[3] has isolated from the contents of the molluscum tumor a filterable virus consisting of a protoplasmic organism of rather complicated structure, and quite actively motile.

THE LESIONS

The lesions appear as papules, either rounded or umbilicated at the center, from a pinhead to a split pea in size, but usually about 3 mm. in diameter; or rarely as small pedunculated tumors with an irregular surface. The plain papules are pinkish or yellowish; while the umbilicated form, which is the more common, is usually yellowish or waxy looking. The central depression may appear dark (gray or nearly black), or of a creamy white. It is seldom that the lesions coalesce. When squeezed quite vigorously, a grayish white, amorphous substance resembling sebum held in a delicate connective tissue reticulum is expressed from the depths below the umbilication. Usually the lesions are quite indolent, and eventually disappear by absorption. Suppuration is rare. The pathology is still quite obscure. Whatever the cause may be, it appears that there is a hyperplasia of the rete mucosum; the epithelial cells become altered and degenerate; and there is formed a cheesy, homogeneous mass, containing the so-called "molluscum bodies." This cheesy mass is enclosed in a fibrous capsule, which sends delicate shreds throughout the mass to form a reticulum. (The molluscum bodies consist of small, clear, hyaline bodies, oval in shape, resting close to the nuclei of the epithelial cells, and having their own nuclei.) One will find a good deal of confusion in the description of the pathology and of the molluscum bodies by different investigators.

The symptoms are almost nil subjectively except when the lesions occur on the eyelids or conjunctiva, in which case there is usually associated a good deal of conjunctivitis. One of the writer's cases, Mr. R. P., presented an accompanying follicular conjunctivitis confined to the lower lids, and very stubborn in character. The other, Mr. A, had what appeared to be a simple conjunctivitis.

There are not many conditions with which this ailment can be confused. At first sight it might be mistaken for acne, a syphilid, or even for an atypical variola; and the pedunculated form might be diagnosed as a verruca. Comedones and fibromata are also to be excluded.

TREATMENT

Many different methods of treatment have been suggested, such as expression; cauterizing with carbolic acid, trichloracetic acid, or strong silver nitrate solution; the application of oxid of zinc, or boric acid powder; nipping off the peduncu-

* Read before the Eye, Ear, Nose, and Throat Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

lated tumors; the electric needle; and the actual cautery. The writer believes that the actual cautery applied at a low degree of heat, just below a dull red, is one of the best methods, as its action is quick, painless and efficient, and leaves no scar. Under its use the lesion promptly scabs, desiccates and disappears.

The prognosis seems to be good for ultimate recovery without sequelae.

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DISCUSSION

M. F. Weymann, M. D. (2007 Wilshire Boulevard, Los Angeles)—Doctor Kiefer has done us a service in calling to our attention a condition which may be met with by oculists, and still is so little known to most of them. Although the condition may be common to dermatologists, it is rare in an ophthalmological practice. In over five years I have had only one patient with this trouble. She was a young woman with two discrete nodules about the size of a pea on the upper left lid. These were umbilicated and about one centimeter apart. There were no other lesions on the body, but there was a history of one on the lower lid which had previously spontaneously disappeared. For microscopic study, I removed both lesions with an elliptical incision. The histological picture was typical of molluscum contagiosum as described by Doctor Kiefer. There was no recurrence.

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J. William Crawford, M. D. (384 Post Street, San Francisco)—Molluscum contagiosum is primarily a dermatological problem rather than an ophthalmological one. It is essentially a disease of the skin and affects the skin in the neighborhood of the eyeball only occasionally, but in such cases it in nowise differs from molluscum contagiosum elsewhere on the body. Its extreme rarity as reported by Doctor Kiefer and other ophthalmologists is only an apparent one, for molluscum contagiosum is a disease seen quite commonly by dermatologists, as the records of any skin clinic will show. The vast majority of the patients affected with the lesions on the skin about the eye go directly to the dermatologist or are referred to him by the physician first consulted. It is only occasionally that such a patient will consult an ophthalmologist. It is quite possible too that in some cases the diagnosis is overlooked by the attending physician and the lesion put down as a verruca, a mistake that can readily be made by the uninitiated.

It is therefore well that we have our attention called to the possibility of the condition and be reminded of its essential characteristics as Doctor Kiefer has done.

The essential characteristics of the disease are these:

1. Small isolated, waxy epithelial tumors, white or pink in color, having minute rounded orifices at their apices looking not unlike small pearl buttons.
2. The condition is mildly contagious.
3. Mucous membranes are but rarely affected, but when they are involved the lesions present the same characteristics.
4. The condition tends to spontaneous recovery.
5. The majority of the patients are children.
6. Constitutional symptoms are absent.

The most common error in diagnosis is to confound the condition with verruca, though the lesions are sufficiently characteristic to be readily recognized if the disease is kept in mind. The absence of pedunculation and the presence of umbilication serve to differentiate the conditions.

The simplest treatment, probably, is to curette the lesions and touch the base with phenol. This is the method followed in the dermatological department of the University of California.

❊

George H. Kress, M. D. (245 Bradbury Building, Los Angeles)—Diseases which are only occasionally met with lead most physicians to take an increased interest therein. Thus pterygia, which almost all medical students in America early learn to recognize, are rather infrequently met with in European clinics and excite special comment.

Molluscum contagiosum is primarily an infection of the skin, more often of the face; and because the lesions are often on the eyelids, not infrequently come under the observation of the eye specialist. Doctor Kiefer has described the disease and the current views in regard thereto. It must be confessed that since it was first discovered about a century ago, that our actual knowledge of it has not been greatly increased. Its clinical signs were then recognized, but its causative agent has as yet not been isolated. Its symptoms are mild and few. As stated by Doctor Kiefer it runs a somewhat benign and sluggish course and responds to treatment quite readily. Haab mentions having inoculated himself, and that in his case it was about a half year before the disease developed. It has been more frequently observed in institutions for juveniles, and among persons having uncleanly habits or of undertone nourishment. The lesions are as given by Doctor Kiefer, and the pathologic changes are largely those associated with a degeneration of the epithelial cells.

❊

Doctor Kiefer (closing)—I wish to extend my thanks to Drs. George Kress, J. W. Crawford, and M. F. Weymann for their kindly and thorough discussion of the subject, which leaves me nothing further to add.

SICKNESS VERSUS ACCIDENTS IN INDUSTRY*

By C. O. Sappington, M. D.
Oakland

Discussion *by Robert T. Legge, M. D., Berkeley; Philip Stephens, M. D., Los Angeles.*

A CASUAL survey of the history of the state compensation laws of this country leads one to the inevitable conclusion that workmen are fairly well protected in case of injuries resulting from industrial accidents. Such a provision arose out of the fact that most authorities came to the decision that the responsibility for the economic adjustment, consequent upon injury, incapacity and rehabilitation should rest with the employer and be charged to the cost of production. That such a theory has been proven sound in practice is now a matter of history.

Following upon this principle came the problem of the assumption of risk from the standpoint of insurance carriers. Various industrial organizations were quick to realize the opportunities thus presented, with the result that there is now considerable competition to care for injured employees.

CAUSES OF ABSENTEEISM

Today approximately 90 per cent of industrial organizations are doing for their employees only

* Read before the California Medical Association, Industrial Medicine and Surgery Section, at the Fifty-Sixth Annual Meeting, April 25-28, 1927.

what is required by law—caring for injuries. The purely medical phases of industrial work have up to the present time not only been side-stepped, but in most instances have been willfully neglected. The following tables presenting statistics in various industries may be of interest in this connection:

Table 1 from Hackett [1] shows that sickness was responsible for 60 per cent of absenteeism, while accidents were the cause of only 0.15 per cent.

TABLE 1—*Causes of Absence in a Munitions Plant, September to November, 1918 (Total, 18,491 Cases)*

Cause	Percentage of Absenteeism
Accidents	0.15
Sickness	60.75
Death	5.30
Personal	28.11
Legal	.90
Miscellaneous	4.78

Table 2 shows the experience in a large manufacturing concern. Sickness and personal reasons were the cause of 85 per cent of absences as compared with 3 per cent resulting from accidents.

TABLE 2—*Causes of Absence in a Middlewestern Manufacturing Group of 6700*

Cause	Percentage of Absenteeism
Industrial Accidents	3.2
Non-industrial accidents	1.1
Sickness (disability more than two consecutive days)	31.5
Personal reasons and sickness of less than three days	64.2

A coal and coke company record is shown in Table 3. Forty-five per cent of absenteeism was occasioned by sickness, whereas 22 per cent was caused by accidents.[1]

TABLE 3—*Causes of Absenteeism in a Coal and Coke Company*

Cause	Percentage of Absenteeism
Accidents	22.0
Sickness of absentee	45.1
Sickness in family	3.7
Business	20.8
Miscellaneous	8.7

Somewhat recently a survey of records of the Edison Electric Illuminating Company of Boston (Sappington [2]) for the five years, 1918-22, showed the results found in Table 4. Observe that there were approximately twenty times the number of cases of sickness as accidents, that the working time lost was sevenfold in cases of sickness, and that disability on account of illness was the cause of 92 per cent of absenteeism.

TABLE 4—*Absenteeism Experience of a Boston Public Utility During 1918-22*

Cases	No. Cases	Work Days Lost	Percentage of Absenteeism
Sickness	14,280	83,280	92.1
Industrial accidents	774	13,221	4.9
Non-industrial accidents	448	3,377	3.0
All causes	15,502	99,878	100.0

COSTS OF ILLNESS IN SOME INDUSTRIAL ORGANIZATIONS

Costs are always interesting to the industrial executive. In the Edison series sickness cost $139,872.40 compared with $29,412 paid out for accidents. These amounts were based entirely upon the money paid as benefits by the employees' association.

Table 5 shows the number of cases and the chief types of illness segregated according to cost.

TABLE 5—*Benefits Paid for the Six Greatest Causes of Illness (Edison Experience, 1928-22)*

Disease	No. Cases	Benefits Paid
Common colds	5,328	$ 4,898.20
Minor digestive complaints	1,246	508.20
Pharyngitis and tonsillitis	1,007	2,455.20
Functional nervous diseases	731	19,923.20
Dysmenorrhea	683	951.10
Rheumatism, arthritis, gout	651	8,098.50
All diseases	14,280	139,872.40

The chief kinds of illness considered as factors of lost time are shown in Table 6. Note the great loss of time from common colds and the severity of joint diseases and functional nervous disturbances as shown by the average working days lost per case.

INDUSTRIAL MORBIDITY: NATURE, RELATION TO TIME LOST, MORBIDITY RATES

TABLE 6—*Total Time Lost and Average Work Days Lost Per Case in Chief Illnesses*

Disease	No. Cases	Total Days Lost	Average Work Days Lost Per Case
Common colds	5,328	16,983	3.2
Disturbances of digestion	1,246	2,647	2.1
Pharyngitis and tonsillitis	1,007	4,698	4.9
Functional nervous diseases	731	6,882	9.4
Dysmenorrhea	683	1,486	2.1
Joint diseases	651	4,781	7.4
All diseases	14,280	83,280	5.8

Table 7 shows that higher rates of illness in the chief types of disability causing absenteeism in the Edison experience were found in the younger age groups.

TABLE 7—*Rates Per Hundred Employees, by Age Groups, for Illnesses Causing Highest Absenteeism*

Disease	Rates per 100 Employees in Age Groups as Shown						
	10-19	20-29	30-39	40-49	50-59	Over 60	All Ages
Common colds	101	57	50	51	31	18	47
Disturbances of digestion	23	15	11	10	6	3	11
Pharyngitis and tonsillitis	21	13	9	5	2	1	9
Functional nervous diseases	13	9	6	5	4	2	6
Dysmenorrhea (per 100 women)	30	42	20	12	4	0	32
Rheumatism, arthritis, gout	2	4	6	10	10	8	6
All other diseases	110	47	45	45	35	30	41
All diseases	285	158	132	128	88	61	128

Table 8 shows that the highest disease rates occurred among the females.

TABLE 8—*Number of Cases, Total Rates and Sex Rates for the Chief Disabling Illnesses (1918-22)*

Diseases	No. Cases	Rate Per 100 Persons	Per 100 Men	Per 100 Women
Common colds	5,328	47	41	76
Diseases of digestion	1,246	11	17	9
Pharyngitis and tonsillitis	1,007	9	6	19
Joint diseases	651	6	6	4
Dysmenorrhea	683	....	....	32
Functional nervous diseases	731	6	3	19
All other diseases	4,645	41	51	222
All diseases	14,280	128	157	683

Time and space forbid the quoting of more data. In addition to the industrial examples which have been mentioned it should be stated that of many commercial insurance companies which write both health and accident protection, the majority report that 50 to 80 per cent of their claims are paid for sickness.

RELATIVE RÔLES OF ACCIDENTS AND DISEASE IN INDUSTRY

Insurance carriers and employers are interested in the reduction of accidents and occupational hazards.

Can the most efficient industrial injury service exert an ameliorative influence on the incidence of accidents due or related to bad lighting, improper ventilation, toxicological factors or mental and physical defects? The answer is that one cannot any more logically separate preventive and curative measures in industry than he can separate mental and physical processes in the same human body.

Do not mistake the interpretation here intended. One would not vote for a relaxation of vigilance on the part of those attempting to reduce the number of industrial accidents. Typhoid prophylaxis is only half the story of control; the polluted stream must also be purified. The source of the difficulty is most important. Today the greatest single economic drain in industry is sickness. In the words of a leading health authority:[3] "For every industrial disability needing surgical attention there are probably ten or more cases needing medical investigation, and of this larger number the treatment is preventive. Hence medical work in industry should be organized around preventive medical undertakings rather than around surgical and curative measures."

FUTURE POSSIBILITIES

Two events have taken place in the field of industrial medicine during the past year which may be cited to show the way industrial medical service is tending. The first was the Fifteenth Annual Safety Congress at Detroit.[4] The subject of health problems was the dominating issue of this conference, it being the feeling of the group that "health service should be based fundamentally on prevention which, from the industrial standpoint, is far more important than curative medical or surgical procedures." The second was the annual meeting of the Association of New York Central Lines Surgeons at which was presented a symposium on periodic health examinations.[5]

Industry is now assuming and will continue to more widely assume the responsibility for sickness in its workers. As one industrial hygienist[6] has put it, the industrial physician "ought to be projected into the great scheme of production and not forever played as a life saver." There is no logical reason why the financially more important problems incident to sickness should not be made a part of the cost of production as has been the case with accidents; but most important of all is the service that provides for careful examinations before employment, correction of physical defects, early treatment of minor ailments and other procedures calculated to preserve the health and efficiency of the worker, upon whom the quality and quantity of production depend.

Hayhurst[7] has summarized the values to be aimed at as follows:

1. Control of environment, personal hygiene, and physical examinations.

2. The fundamentals of industrial health which require that cost of production include the cost of health maintenance.

3. The application of health standards directly to the working classes.

4. Organization, official and non-official, for effective administration with qualified personnel.

What form will these activities take? There are several possibilities:

1. The extension of private insurance services to include this work in industrial medicine; this is now being practiced on a large scale in some eastern cities.

2. The inclusion of a division or a bureau of industrial hygiene as a part of the State Health Department. This procedure has met with considerable success in some states.

3. Probably best of all is the formation of competent medical groups which will have contact with industry on the one hand and research relations with hospitals and medical schools on the other. Such a group could foster a program of education among industries, demonstrating the value of health service and also cooperate in teaching and research in medical schools and hospitals.

CONCLUSIONS

1. Sickness is a far greater cause of industrial inefficiency, spoilage, absenteeism, labor turnover, and financial loss in general than injuries. It is because of this economic factor that industry will more and more assume the financial responsibility for the health of its employees.

2. Industrial medicine is in reality a phase of public health. As a leading health authority has recently stated (Winslow[8]), "Industrial medicine has vast possibilities of usefulness, and in this country has already accomplished more than any of the other tendencies which have been noted in bringing medical service to the individual at a

stage when the most effective measure of prevention can be assured."

3. The field of industrial medicine contains abundant material for scientific research. The opportunities will be delayed or entirely lost, however, unless more financial support and vital encouragement is forthcoming from official and non-official health agencies. Large national and local organizations must lend active aid and point the way during the formative period. Better and more definite relations must be established between active industrial physicians, hospitals, and medical schools, if organized medicine would protect its rights as a leader in the field of industrial health.

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DISCUSSION

Robert T. Legge, M. D. (University of California, Berkeley)—The researches of Sappington and Brundage in their studies of the absences from work due to sickness and accidents among employees of the Edison Electric Illuminating Company of Boston have revealed fundamental information needed for the acceleration of progress in the field of industrial medicine. They have definitely shown that sickness as a disability factor caused twelve times as many absences as industrial accidents.

This fact fully established, the problem remains whether industry should serve its employees with full medical care. The employer realizes he is legally responsible in all injuries, ailments and occupational diseases arising from employment. He likewise is fully cognizant that absenteeism due to illness is a financial loss to him as well as to his employee.

The National Industrial Conference Board recently, after considerable study and by careful surveys, published the following, which I shall quote:

"Private medical practitioners today will hardly question the right, even in most cases, of the obligation of an employer to provide prompt medical attention to those of his employees who have suffered injury or become ill in the course of their employment. They will surely approve every well directed effort of the employer to maintain hygienic work places and to promote the health of his employees while at work.

"Differences of opinion may arise as between private practitioners and the plant physician when the latter undertakes the treatment of all illnesses, no matter how unrelated to their employment. The tact and common sense of each plant physician must find the proper course to pursue, which must be ethical and at the same time in the best interest of the patient, with due regard to the financial interest of the employer.

"The higher the character of medical service rendered by the plant physician the more will his influence tend toward the development and maintenance of a high type of medical service in the community in which the plant is located. There is some evidence that the supposed encroachment of industrial medical activities upon the private practice of outside physicians is more apparent than real. Where the activities of the industrial physician are confined to the treatment of ordinary injuries and ailments received during the course of employment, as well as the diagnosis of medical cases, it has been found that the work of the private physician has been augmented rather than curtailed. This is particularly true where physical examinations are required of applicants, and the defects discovered are referred to the outside physician for correction and treatment."

Philip Stephens, M. D. (1136 West Sixth Street, Los Angeles)—"Whither are we drifting?" is the thought which strikes me with considerable force as I read Doctor Sappington's reasonable and convincing statistics and argument for a still further advancement in the program of responsibility with which not only all corporations, but all employers of labor have been, by the enforcement of the state compensation laws, compelled to assume. I believe it is an established fact at the present time, both with the working man and his employer, that the law is a good one. All are benefited—even our medical profession.

I believe that employers of labor have and should exercise their right to select by adequate physical examination healthy men and women, for the very obvious reasons: to protect themselves in their future relations, and to promote the efficiency of an organization which employees, healthy in mind and body, bring.

I believe that these employees should be examined from time to time for the above-mentioned reason, of having a healthy and efficient organization, and if the corporation has gone to the trouble and expense to so select its employees, an adequate medical organization should be maintained to keep it so, and, in most public service corporations, for the protection of the public.

Carrying the matter of medical service to the point where both the employer and employed are equally and plainly benefited by the plan is as far as we should go. Of this I am firmly convinced from many years' experience in work of this character.

We should not advise the carrying of our medical supervision to the point where the employer is assuming or tending to assume the entire responsibility for both the health of and accidents to the employed. A limit can and should be sharply drawn, not only for the good of all parties concerned, but for the future of our profession.

The character and personnel of the men doing industrial work undoubtedly is yearly improving, and with industrial advance there is a field not only recognized, but being followed by men of character and broad outlook.

These men should work hand in hand with the rest of our profession for the good of all, the maintenance of our ideals, and combat the fast-growing tendency in medicine in general, and in industrial medicine in particular, to commercialize it.

Doctor Sappington (closing)—I wish to thank Doctors Legge and Stephens for their able discussion of this paper. Both have emphasized the necessity for the increase of the preventive phase of the work in the actual practice of industrial medicine.

Another important point brought out by the discussers is the need for the raising of the standards

of industrial medicine and the prevention of commercialization of the practice of industrial medicine and surgery.

The standard of practice for any group is dependent upon the personal excellence of the individuals composing the group; going one step farther back, these ideals and principles are largely developed and started in educational institutions; in the final analysis the responsibility for the type of industrial work largely rests with those who are also responsible for the grade of work done in any medical specialty.

Only a thorough cooperation between industries, medical schools, physicians, and students, will secure the desired results.

THE LURE OF MEDICAL HISTORY

GALEN*

By Clifford W. Mack, M. D.
Livermore

THE name of Galen has come down to us in medical history as one of the early Greeks who exerted a great influence upon medical thought and practice. He takes an equal place, if not a superior one, with Hippocrates as the father of medicine. Hippocrates is usually given that honor, but it seems to be proven that many of the treatises collected under his name cannot really be attributed to his authorship. Galen refers to him in many of his writings and wrote several commentaries upon them. It is asserted that the Hippocratic oath was not promulgated by Hippocrates the second, the author, but was only ascribed to him by the ancients. Mercurialis ascribed it to other persons, using as one proof that the oath prohibits the induction of abortion, and from a treatise by Hippocrates cites a case of a patient who was aborted under his own direction and prescription. It has never been determined whether the oath was written before or after Hippocrates' time, but probably the latter is correct.

In contrast to Hippocrates, the writings of Galen, of which he is definitely proven as the author, are very numerous. He was not only famous in his own time, but his teachings dominated medical thought for centuries. There must be some merit in his works, otherwise it would be difficult to understand that they were standard for over twelve centuries and any departure from them was considered heretical. Five hundred years after his time he was held in such veneration as to be regarded by many as a god and religious worship accorded him. He was copied by the Arabian physicians and, in spite of virulent opponents, the greater part of the medical world held his beliefs. Galen was compelled to oppose a long tradition of medical thought in vogue during his time. A succession of learned men had preserved in one family—that of Asclepiades—all that was then known of medicine. These ideas were based upon superstition, healing by incantations, etc., and were passed on largely by word of mouth. They were gathered together first as a written record by Hippocrates.

In the early days medicine was subject to much speculation and produced many sects which attacked each other virulently. At the time of Galen there were six prominent sects. He refused to be a follower of any but remained independent in his thought choosing from all, those things which seemed to him proven by judgment and experience. Galen did not spare Hippocrates in his criticism of the early medical writers although he gives him credit for laying the foundation of true medical knowledge.

Galen was born in Pergamos in Asia Minor—a city in which there was a temple dedicated to Esculapius, about 130 A. D. in the reign of Adrian. He lived to be 100 years old. Galen's father was a wealthy, educated man, acquainted with literature, philosophy, astronomy, geometry, and architecture. It can therefore be assumed that he would be zealous in the education of his son, imparting to him all the advantages to be obtained in the educational centers known to the early Greeks. Galen studied in the School of Philosophers, of which there were many in those days, such as the Stoics, Academicians, Peripatetics and Epicureans, and then began the study of medicine at the early age of seventeen. In his youth he traveled much to acquaint himself with medicine in different countries, visiting Alexandria (in Egypt), Cilicia, Palestine, Crete, Cypress, and the Isle of Lemnos. At the age of twenty-eight he returned to the place of his birth to begin the practice of medicine. At the age of thirty-two he went to Rome, but was driven out in a few years by the jealousy of other physicians. During his stay Galen apparently made his name well known in Rome because he had become an intimate of persons of rank and acquired a large reputation. It is supposed that he was about thirty-seven years of age when he left Rome, returning to Pergamos. He was recalled by Marcus Aurelius and continued throughout the rest of his life in or near the Roman capitol.

The writings of Galen have come down to us only in the Greek and Latin. It is probably known to but few that there is no complete English translation. The writings consist of nearly seven hundred books or treatises, of which several are lost. The original is in Greek; different portions have been translated into Latin and these have passed through numerous editions. The principal and best of the translations are those published at Venice by Juntas and at Basel by Forbinius. The writings of Galen are epitomized from the original translations by an American, John Redman Coxe, M. D., member of the Royal Medical Society, and his work was published in Philadelphia in 1846. He possessed Greek editions and also editions in the Latin, the third of 1556, the sixth of 1586, the ninth of 1609—all Venice copies of the Basel edition of 1549.

This book by Coxe is worth perusal by the physician who wishes to know some of the work of which we today enjoy the heritage. Coxe states that the Latin translators have divided the writings of Galen into seven classes. These classes are preceded by introductory books giving a general idea of the work to follow. The latter were expected to be used first by students and hence

* Read before the Galen Club of Oakland, December 23, 1927.

GALEN
A statue of Carrara marble made in Italy in the year 1600 by Tullio Lombardi. Presented to the Barlow Medical Library, Los Angeles, by Dr. W. Jarvis Barlow in 1924.

they were called by Galen "Tyrones." The seven classes consist of: (1) Physiology, discussing the nature of the human body, its elements, temperaments, humors, structure, the anatomy and use of various parts. (2) Hygiene, the means of preserving health on air, food, drink, sleep, rest, motion, repletion, abstinence, affections and emotions of the mind. Much is said also of the powers of food, as healthy or unhealthy state of fluids; some mental affections are also considered; some gymnastic exercises. (3) Etiological, explanatory of diseases, their symptoms and causes. (4) Semeiotics, the division of medicine that is connected with the symptoms which distinguish particular diseases and the parts affected by which we are enabled to prognosticate. (5) Pharmacy, preparations of remedies. (6) Has to do with the methods of treatment, scarification, phlebotomy. (7) Therapeutics, pertaining to the practice of medicine, diet, remedies for each disease—principle and practice of surgery, embracing the treatment of fractures, luxations, and bandaging.

In the mass of material there are a few outstanding features which show the thoughts and principles that guided Galen, and some of his actual research work. He emphasizes the importance of cultivating the mind in the quest of art rather than toiling in the quest for riches. In one passage, however, he is explicit in his discussion of fees, stating that this should be agreed upon in advance before undertaking a long course of treatment unless an emergency dictated otherwise.

He devoted a book to the subject of "A Good Physician Must Also Be a Philosopher," mentioning how important it is for medical men to have communion with learned people, thereby increasing their value in the profession. The discussion of sects of medicine is very extensive and Galen brings clearly to the fore the thought which is today the governing principle of medicine—that material from all the sciences should be used in our art and practice; that everything accepted should be founded on truth, that it should be useful and conformable to established principles. The mere authority or dogma of the individual is not acceptable except upon the foundation of investigation by experiment.

Galen is credited by Coxe as the first real anatomist. He attached much importance to this subject in the practice of surgery because in the extraction of darts, excision of abscesses and in war surgery it was important to know the location of the veins and arteries. He also gave great importance to the study of osteology. He differentiated sensory and motor nerves and Galen was well versed in brain anatomy, taking notice of the ventricles, the optic and cranial nerves up to the seventh pair.

In further praise of Galen, Coxe goes so far as to intimate that he should be considered the founder of anatomy and not the Brussels physician, Vesalius, in the sixteenth century. Vesalius endeavored to expose the mistakes of Galen, presenting extracts of his work, but it is stated by his enemies that in order to enhance his own worth he erroneously translated the quotations. It is even said that when a Venetian printer employed Vesalius to correct the anatomical works of Galen, both in Latin and Greek, he rendered the text more corrupt than before. He imputed to Galen anatomical knowledge only from apes and brutes. This Coxe believes is proven to be contrary to facts, and it is asserted that Vesalius used animals for his anatomy of the larynx, tongue, and eyes. Galen was particularly interested in dissection of the human arm and hand because he believed this intricate anatomical mechanism made possible man's development to a higher state of civilization.

A question that could give rise to much argument is brought forth by Coxe concerning the priority of the discovery of the circulation. In one book entitled "Is the Blood Naturally Contained in the Arteries" he mentions that all teachings heretofore held to the opposite and that they contained air. Galen tied an artery and then opened between the ligatures showing that it did contain blood. He contended that there was a passage of the blood from the veins into the arteries. In this conception he antedates Harvey and in a manner prepared the way for him as the discoverer of the circulation. Galen believed there was blood in

both veins and arteries, dissimilar in constitution. He maintained that the heart filled the arteries and that they pulsated only by the force of the heart.

In another book Galen treats of the respiration, stating that something was discharged of a noxious character, of a burned or carbonized nature. He noticed that one artery arises from the heart and ramifies through the lungs; and that one rises from the left ventricle, spreads throughout the body and pulsates in unison with the heart. He speaks of the junction of the arteries and veins by anastomosis. The one weak link in Harvey's theory was that he did not know whether there was a true connection between the two or an indirect one, that is, by absorption from the tissues to the veins. It was reserved for Malpighi four years after Harvey's death to demonstrate the capillaries. Galen gave an accurate description of the valves of the heart. He knew the influence of the right side of the heart and the arterial character of the blood in the pulmonary veins, and the venous character of the blood in the pulmonary artery.

This does not in any way detract from the honor bestowed upon Harvey as the discoverer of the circulation. The resurrection of buried knowledge may be as important to the progress of science as the original work. It is interesting, however, to realize that our science goes back many centuries and that ancients were correct in many of their assumptions.

In the field of surgery and treatment, Galen believed more in assisting the natural forces of the body, claiming that nature brings about cures, the physician only supplementing her efforts. He relied much upon diet, baths, exercise, as well as upon the crude pharmaceutical concoctions that originated during his time.

Anyone interested in medical history will enjoy the perusal of Galen epitomized by Coxe, and those who are not so minded will undoubtedly have their interest aroused. It is wholesome for us to appraise our own knowledge and usefulness in the light of the past.

Livermore Sanitarium.

CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

CONGENITAL HEART DEFECTS

WITH REPORT OF AN UNUSUAL CASE

By H. E. Butka, M. D.
Los Angeles

CONGENITAL heart defects and abnormalities are relatively frequent, ranging from the common patent foramen ovale to the less common defects in the structure of the heart and in the blood flow. The symptoms accompanying the various cardiac defects are surprisingly few, and it is not uncommon to find an anatomical condition which at first thought would seem to be inimical to life, giving very few subjective symptoms. The discovery of a defect awaits a careful study of the patient or frequently the pathologist's report at autopsy. Phillips,[1] Holman,[2] Reuben,[3] Steffen [3] and others, have discussed the various congenital malformations and anomalies. However, my failure to find in literature a description of an anatomical defect similar to that present in this case, and the unusual complications prompt me to present the following:

CASE REPORT

Patient R. W. S., age 31, American, machinist.

Personal History—Father died of diabetes. Patient suffered from measles, pertussis, and influenza. Habits were excellent. He worked quite hard and had suffered no loss of weight. Patient had complained of vertigo, palpitation and fatigue, and a considerable discharge from the nose each morning. A further study of patient's history revealed that he had suffered frequently with sore throat and colds. He had had "heart trouble" all his life, with pneumonia at the ages of 5, 12, and 19. He had also an attack of rheumatic fever six or seven years ago. Heart symptoms became worse at each attack.

Present Complaint—Patient entered White Memorial Hospital clinic May 7, 1927, complaining of pain over right eye, sore throat, and difficulty in talking. This pain over the right eye began suddenly about one week previous, and was of sharp and stabbing character but disappeared at night after sleeping. It was worse when the head was bent over, and at the time of examination the pain was constant and severe. The throat had become sore and the patient was hoarse.

Physical examination revealed a middle-aged man, apparently quite sick. Temperature, 98.8; pulse, 74; blood pressure, 80 systolic; weight, 150 pounds. The skin was slightly yellowish and the eyes revealed some jaundice. The breath was fetid, the gums were red, the tongue was coated, and the tonsils were enlarged and reddened. There was a whitish exudate over the surface of the tonsils and pharynx.

The phalanges were enlarged and club-shaped, and the nails showed marked cyanosis. There was also marked cyanosis of the ears, lips, and extremities. Examination of the heart region showed a diffuse apex beat in the sixth interspace, two centimeters to the left of the midclavicular line. There was a marked thrill transmitted to the axilla and over the sternal region; and a murmur accompanying the first sound which was apparently split at the apex, and was heard in the aortic and pulmonary areas.

Examination of the nose and throat revealed a definite exudate covering the tonsils, larynx, and epiglottis. X-ray report of the sinuses disclosed an involvement of the right frontal and left maxillary sinuses. He was then referred to the heart clinic for study as to advisability of the removal of the tonsils. The diagnosis returned was mitral stenosis and insufficiency; and tonsillectomy under local anesthetic to be followed by two weeks' rest in bed was advised.

Treatment—The tonsillectomy was done under local anesthesia, butain being used, the total time required being seven minutes. Following the tonsillectomy the patient was removed to the White Memorial Hospital and there suffered a rather severe hemorrhage. This was accompanied by shortness of breath, palpitation of the heart, and severe pain in the chest.

Following his entry into the hospital his temperature began to rise from 98 degrees on the 11th to 104 degrees at noon on the 12th. His blood count showed 100 per cent hemoglobin; 5,670,000 red cells; and 14,400 white cells; with a differential count of 79 per cent polynuclears. Consultations were held and a diagnosis of lobar pneumonia was made. All efforts at stimulation of the heart failed and the patient continued to grow worse, becoming delirious, and dying on the morning of May 13.

The *autopsy* performed immediately after death revealed the following:

Internal examination: Thorax upon opening revealed no free fluid in the pleural cavities and no

View of left ventricle showing mitral and aortic valves. Note the small size of the aorta.

Posterior view of heart, showing left auricle resembling an auricular appendage without pulmonary veins.

View showing patent foramen ovale, tricuspid valve, pulmonary artery and the right ventricle.

adhesions. The right lung was voluminous and doughy in consistency. No consolidations were noted. The left lung was voluminous and there was found a consolidation of the lower lobe, especially of that portion overlying the pericardium.

Heart: Approximately 50 cc. of brownish red fluid was found in the pericardial sac. There was quite a marked ecchymosis. The heart occupied the greater part of the left chest, measuring 18 x 13 x 9 centimeters. Tricuspid valve was 17 centimeters in circumference. Pulmonary valve was 11 centimeters in circumference. Some sclerosis was present on both valves. The right auricle and right ventricle were markedly dilated. The myocardium of the right ventricle measured 1.5 cm. in thickness. The cavity of the left ventricle was small and there was no stenosis of the mitral valve. The left auricle was small consisting mainly of the auricular appendage. No blood vessels were found opening into the left auricle. The foramen ovale measured 5 centimeters in diameter and was divided by strands into four sections, three of which were open and about equal in size, each measuring approximately 3 centimeters in diameter. The entire supply of blood to the left side of the heart must have passed from the right side through this foramen. The aortic valve was 6 centimeters in circumference. Two of the aortic cusps were adherent because of an inflammatory growth. A careful study of the auricles revealed only the venae cavae entering the enlarged right auricle. The pulmonary veins opened into the superior vena cava very close to its junction with the auricle.

Abdomen: There were dense adhesions about the gall bladder binding it to the pyloric portion of the stomach and the first portion of the duodenum. The transverse colon lay deep within the pelvis.

The appendix was 10 centimeters long and revealed some dilatation of the distal end. The serosa was congested. Upon section there was found a quantity of pus in the distal 2 centimeters, with beginning necrosis of the mucosa. There were adhesions and subsequent stenosis just above this area.

The liver was much enlarged and extremely dark in color. On section there was marked lobulation with changes that suggested fatty degeneration and chronic passive congestion.

The spleen was enlarged, bluish in color, and extremely firm in consistency. On section there was definite fibrosis and lack of the usual markings.

The kidneys were large and firm. Capsule stripped easily though leaving some scar areas. The usual ratio of cortex to medulla was present. There appeared to be some cloudy swelling.

Stomach: The mucosa was congested. The small and large intestines were negative. The pancreas, bladder, and prostate were negative.

Cause of Death—Lobar pneumonia.

Contributory: Congenital malformation of the heart.

Anatomical Summary: (1) Lobar pneumonia, left lower lobe; (2) acute purulent appendicitis; (3) congenital malformation of heart; (4) chronic cholecystitis with adhesions; (5) chronic passive congestion of liver, spleen, and kidneys.

COMMENT

The patient's first entrance to our clinic was occasioned by a sinusitis involving the frontal and maxillary sinuses, with later involvement of the tonsils. After the subsidence of the acute symptoms the tonsils were removed. The large venous spaces due to the cardiac anomaly allowed a severe postoperative hemorrhage. The lessened resistance and the operative wound at a time when virulent bacteria were present in the nose and throat led to the development of the fatal pneumonia and the accompanying acute appendicitis.

A careful survey of the findings in this case led us to conclude that this patient suffered from a congenital defect causing the entire blood supply to return from the lungs to the right side of the heart along with the venous blood from the superior and inferior vena cava. A portion of this blood passed through the patent foramen ovale and entered the systemic circulation. The symptoms caused by this condition were sufficiently mild to permit: of the patient's growth to adult life; ability to earn his living by a life of moderate activity at manual labor; and to support a wife and child.

312 North Boyle Avenue.

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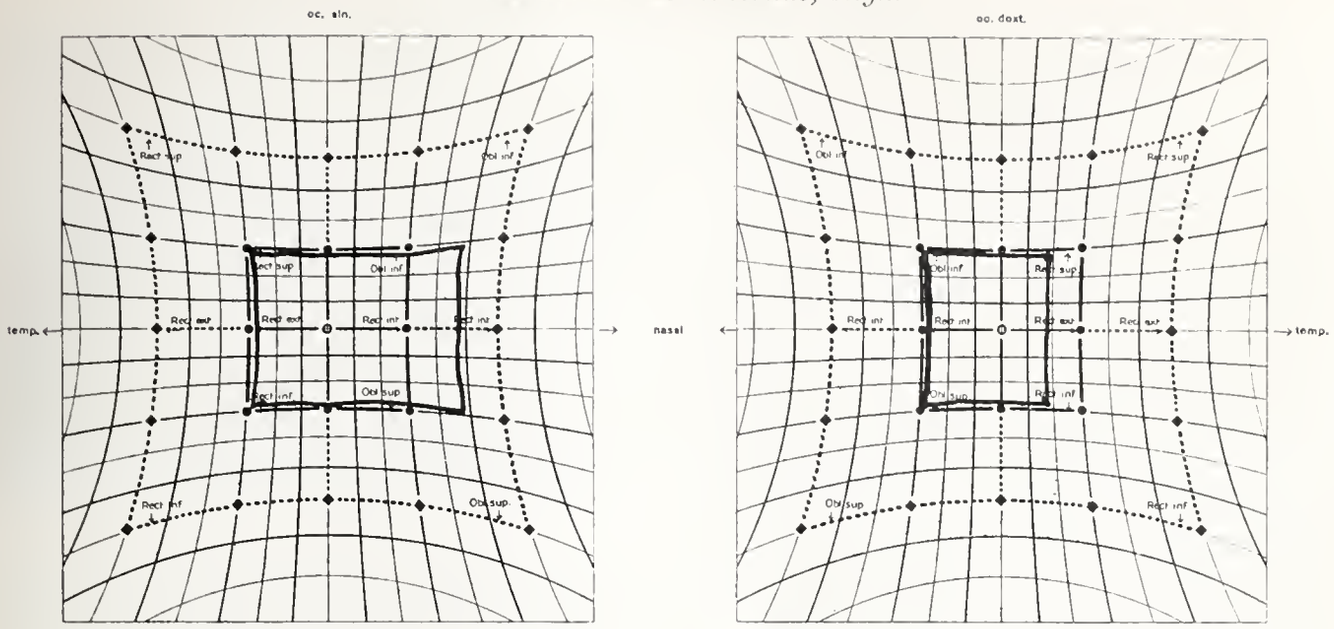
Paresis M. Rectus Externus, Right



Vitrum viride oculo sinistro praepositum. Vitrum viride oculo dextro praepositum.

THE HESS CURTAIN (OR COÖRDIMETER) AS AN AID IN THE DIAGNOSIS OF PALSIES OF THE EXTRINSIC OCULAR MUSCLES*

By DOHRMANN K. PISCHEL, M. D.
San Francisco

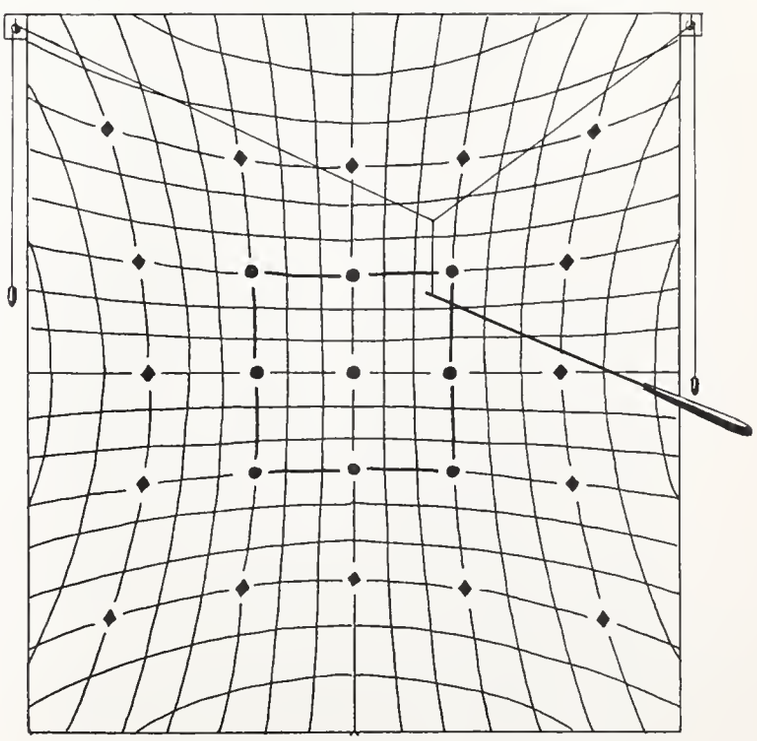
THAT the diagnosis of palsy of the extrinsic ocular muscles is troublesome is shown by the number of the methods employed in making this important diagnosis. Several types of apparatus have also been devised in this connection. The basic principle of all has been the differentiation of the images seen by the two eyes and the notation of the relation they bear to each other. The best known system is that of the lighted candle and colored glass held before the eye. In using this system the patient is called upon to state where and how far apart the images are—a truly difficult task in many cases. When the test is completed there is no accurate record of the result.

A system has been devised for the graphic recording of these results. With the patient sitting before a screen, the positions of the images are then projected on the screen, recorded, and can be transferred to paper for a permanent record. But, even with the positions of the images recorded, the diagnosis of which particular muscle is involved, is still to be made. For one working in a large clinic where these muscle palsies are frequently seen, the interpretation of these results is easy. Not so for the man in private practice.

GRAPHIC DIAGNOSIS OF INVOLVED MUSCLE—APPARATUS DEVISED BY PROFESSOR HESS

Several years ago Professor W. R. Hess at the Physiological Institute of the University of Zurich, devised an instrument which he calls a coördimeter, which not only allows the making of a graphic record of a palsy, but also practically diagnoses the muscle involved.

The apparatus consists of two parts: the first, of a black felt curtain and the second of spectacles with different colored lenses. The black felt curtain (Fig. 1) is marked off by fine red lines into rectangles, so drawn that they are 5 degrees apart if measured from a point 50 centimeters from the center of the curtain. At the intersection of the vertical and horizontal 15-degree lines, are placed round red spots. Similar spots are placed 15 degrees from the center on the vertical and horizontal meridian. These eight spots outline a square. In addition to the eight round red markers placed on the 15-degree lines there are eight additional square red markers placed on the 30-degree lines. These enable one, if one is so desirous, to make a test of the larger excursions of the eye. From the upper corner of the curtain



Curtain used in coördimeter of Prof. W. R. Hess.

* From the Department of Ophthalmology, University of California.

* Demonstration before the Eye, Ear, Nose and Throat Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

are led two green threads to the loose ends of which are hung counterweights, while the other ends are joined together and fastened to a third thread coming from the end of a pointer. The junction of these threads makes a green Y and this Y is used as the point to be pulled around by means of the pointer to touch the various red marks.

The second part consists of a pair of spectacles with one lens green, of the identical shade of the green thread, and one lens red, identical with the red of the curtain marks. Through the green lens only the green thread can be seen; the red, the complementary color, appears as black and thus blends with the black of the curtain. Through the red lens, only the red spots can be seen. Thus the eye behind the red lens fixes, while the one behind the green can deviate without any stimulus to fusing of images.

In making the test in the case of paresis the eye behind the green lens deviates, so that what the patient actually does is to fixate with the one eye on a spot and then draw the green thread to the point on which the macula of the deviating eye is fixed. This point can be noted on a chart. Charts are furnished with two diagrams of the curtains on them, so that it is easy to enter the points. We use the left-hand one when the green glass is before the left eye, and the right-hand one when the green glass is before the right eye.

Having had the patient pull the green thread to all the spots with one eye fixing, we change the glasses and allow the other eye to fix, and repeat the tests. Then, on the charts, we join the marks with lines thus forming polygons. Given the size and shape of the polygons, and a few simple rules to follow, we can read off the name of the affected muscle.

Rules—The smaller polygon indicates the affected eye. The polygon shows a shrinking of the field in one area. In this area is printed the name of a muscle which is affected, and we read it off and the diagnosis is made.

Figure 2 shows a sample chart, with the points to which the thread has been pulled marked out. There is a loss of field in the right-hand diagram, and here can be read the name of the affected muscle, M. rectus externus dexter. The diagnosis is thus made.

In conclusion, I want to repeat that here we have a means of diagnosing paresis of the extrinsic ocular muscles which has the following important advantages. In the first place, it is accurate; in the second it is simple. It does not require the cooperation of an intelligent patient. It does not require an experienced operator. Therefore it can be readily used by the physician who does not confine himself to eye work alone. And in the third place it gives an accurate permanent graphic record. Thus when we repeat the tests at intervals to see whether the paresis is improving, remaining stationary, or increasing, we have an accurate graphic record for comparison. This last is a most important feature.

This curtain can be obtained from the mechanic of the Physiological Institute at Zurich, Switzerland, and will be mailed on receipt of $14.

490 Post Street.

MUCOCELE OF THE APPENDIX*

WITH REPORT OF TWO CASES

By Don D. Weaver, M. D.
Oakland

I WISH to report these two cases of mucocele of the appendix because of the extreme rarity of the condition.

Case 1—Male; Japanese; age 30. Was first seen August 9, 1924, suffering from a dull aching pain in the right lower abdomen. Family and past history negative. Present trouble began about six years previous, with the same dull pain in the right iliac region. Pain has been recurrent at intervals until the present time. Pain and tenderness on pressure had increased during the preceding forty-eight hours so that the patient had been unable to sleep at night. Pain was made worse by exercise. History was otherwise negative.

Physical examination negative except in region of the appendix where there was marked tenderness on pressure, and a localized area of muscle rigidity. White blood count, 9400. Diagnosis: Subacute appendicitis.

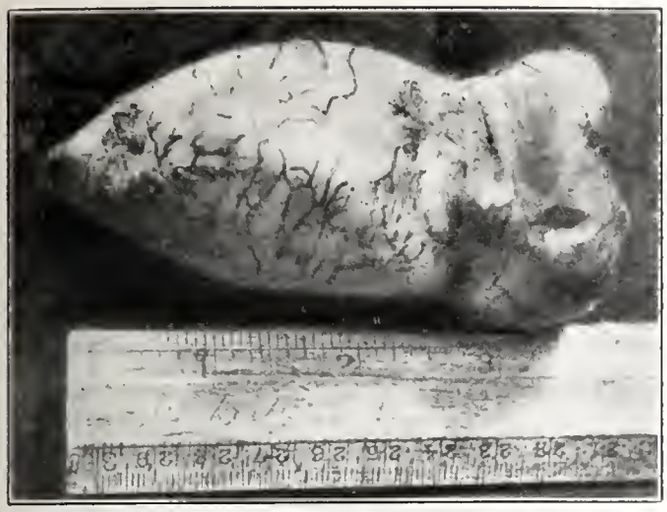
Patient was operated upon at Oakland Central Hospital August 9, 1924. Under nitrous oxid and ether anesthesia the appendix was removed. The only point of interest in the operation was the enlarged appearance of the appendix. It appeared as a sausage-shaped cystic tumor about 9 cm. long by 2 cm. in diameter, and was attached to the cecum by a short cord-like pedicle about one-half cm. long. The serosa had reddened vessels markedly injected. The appendix was tensely distended and translucent when held to the light and was filled with clear liquid mucus. A few drops of pus had settled in one pole.

Pathological Report by Dr. Gertrude Moore—The specimen submitted is an appendix 8 cm. in length by 2 cm. in diameter. The organ has the general appearance of a well-distended sausage. The surface is smooth and glistening. The walls are 2 mm. thick. The cavity is distended with a clear, tenacious mucus. The lining membrane which lines the cystic cavity completely cuts off the outlet to the cecum. Microscopic examination shows the wall to be made up of an outer coat of flattened epithelial cells upon a fibrous connective tissue supporting structure with the greater portion of the wall consisting of fibrous connective tissue and a few non-striped muscle cells. The cells are of a type considerably lower than those usually found in this organ. Diagnosis: Mucocele of the appendix.

Case 2—Mrs. C., age 43; height, 5 feet 5 inches; weight, 165 pounds. Came under observation in November, 1926, suffering from recurrent severe febrile attacks of an unusual nature but which I think have no relation to the condition here reported. History otherwise negative.

Physical Examination—The head, neck, chest, and upper abdomen were negative. Lower abdomen: In the midline of the lower abdomen a firm rounded tumor mass was felt which gave the impression of a three months' pregnant uterus. Apparently attached to the upper pole of this mass an elongated, firm tumor was felt extending upward and into the right iliac fossa. This mass was freely movable. Vaginal examination: The vulva presented a discharging sinus from an old Bartholinic abscess. Perineum normal but bathed in mucopurulent discharge. Cervix large and hard; marked endocervicitis with erosion. Bimanual examination revealed the uterus enlarged to the size of a four months' pregnancy; very hard to the touch but apparently not nodular; firmly fixed in the pelvis. An elongated firm mass which was freely movable was felt extending upward into the right iliac

* Read before the Fabiola Hospital Staff, Oakland, August 30. 1927.



Mucocele of the appendix.

fossa, and was diagnosed as an ovarian cyst. Preoperative diagnosis was fibroid uterus and ovarian cyst.

Operation—December 14, 1926. The cervix was thoroughly cauterized; the uterus was explored. Sinus in the vulva left until a later date.

When the abdomen was opened the pelvis was found completely filled with a large fibroid uterus—intramural fibroids covering the uterus ranging in size from a pinhead to 1½ inches in diameter. Wedged tightly in the pelvic cavity were two ovarian cysts, the left being 2 inches in diameter and the right about 3 inches. A complete hysterectomy was performed, the ovaries being removed first, to clear the field for the removal of the uterus. The appendix was found floating freely in the right iliac fossa as an elongated cystic mass 2 inches in diameter and 5 inches long; the meso-appendix was atrophied; the peritoneal and muscular coats at the junction of the appendix and cecum were greatly distended. The mucous coat which formed the cyst lining could be felt projected into the lumen of the cecum for about one inch. A circular incision was made around the base of the appendix extending to the mucosa, after which the cyst was gently shelled out from the cecum; the mucosa lining the cyst cavity having no connection with that of the cecum. Raw surfaces were peritonealized and the abdomen closed. Recovery was uneventful.

Pathological Report by Dr. Gertrude Moore—The specimen submitted is an appendix 11.25 cm. in length having an average diameter of 4.4 cm. The organ is rather pointed at its distal extremity but blunt and devoid of serosa at the proximal end, the whole forming a perfect sac distended with mucus. The surface vessels are large and dilated. Here and there are foci of torn adhesions on which are interspersed pinpoint to pinhead elevations, all of which are calcified. All of the coats of the organ are thinned, but the atrophic process is most marked in the mucosa. Accumulated in small masses on several points on the inner surface and embedded in a thin, tenacious mucus, are fishegg-like bodies most of which are calcified. The contents consist of a glairy, very tenacious mucus.

COMMENT

Mucocele of the vermiform appendix is a rare and interesting condition, being first described by Virchow in 1863, since which time 168 cases have been reported in literature. The more rare variety of the same condition is the fishegg or globoid body type of which only seven cases have been reported.

The etiology of mucocele of the appendix is rather obscure, but the following underlying conditions are, according to Elbe, essential for its development:

1. A slowly stenosing process at one or more points in the lumen. A rapid stenosis would produce gangrene.

2. A sterile lumen must be present either distal to or between the points of stenosis.

3. There must be an actively secreting mucosa or at least one in which the secretion is more rapid than the absorption. Also some change in the mucosa whereby mucin is transformed into pseudomucin.

4. In the fishegg or globoid body form of mucocele the mucoid material is also secreted from the crypts forming small round bodies which are made up of pseudomucin and resembling fish spawn. This varies in size from the head of a pin to one centimeter in diameter and may at times become calcified; which was the condition found in one of the cases reported here.

Certain types of mucocele are considered potentially malignant because of the fact that rupture may result in a reactionary peritonitis of the progressive type known as pseudomyxoma peritonei. Mucocele of the appendix is the only cause of this condition in the male. In the female it may result from a ruptured ovarian cyst.

The symptoms of mucocele that present are much the same as those of any chronic inflammation of the appendix. The majority of cases reported, however, were of patients with symptoms which were discovered accidentally, or in the course of abdominal operation, or at autopsy.

The chief complications to be feared are intussusception, invagination, volvulus, rupture, and intestinal obstruction; and for these reasons, as well as for relief of symptoms, operation is indicated.

The two cases which I have reported here have several interesting features in distinct contrast to each other. In the first patient the entire appendix appeared as a large distended sausage-shaped mass except for about one-fourth inch of the proximal extremity at its junction with the cecum. Here the stenosis involved all of the coats of the appendix. They were contracted down into a short cordlike structure about one-fourth inch long, from the end of which the mucocele, devoid of all mesenterial attachment, floated freely in the abdominal cavity like a balloon on a short string.

In the second patient the stenosis apparently affected only the mucous coat, the remaining coats being greatly dilated and continuous with those of the cecum. The cyst in this patient protruded into the cecum for at least one inch, invaginating the cecal mucosa ahead of it. Undoubtedly the recent enlargement of this cyst had been intracecal, the thin mucosa at this point offering much less resistance to intracystic pressure than the remainder of the appendix, where all of the coats being intact, there was more resistance. If this condition had progressed it probably would have terminated eventually in rupture into the intestine, or in intestinal obstruction.

1904 Franklin Street.

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

ANEMIA

Robert Pollock, San Diego—At present it seems that anemia may be practically divided into two groups, those in which liver acts as a specific and those in which it does not. The former group represents the so-called "pernicious anemia," a dangerous disease attacking people in middle life and later, and characterized by achlorhydria always, characteristic changes in the blood picture usually, and degenerative changes in the spinal cord frequently. Previous to the medicinal use of liver as advised by Minot, this disease ran an up and down course for a few years and eventually terminated fatally. The liver treatment, soon to be available in the form of an easily administered soluble powder, promises to hold the disease in check indefinitely, but the damage to the stomach and the spinal cord remains.

The second group in which the liver does not seem to exert a specific action is made up for the most part of anemias secondary to some known or perhaps undiscoverable disease. In these cases, besides a diet rich in all essential food elements, repeated transfusions with well-matched blood and the use of arsenic are our best therapeutic agents while we diligently search for and correct the primary cause. In these secondary anemias the blood can become so impoverished as to cause death if treatment be not early applied and vigorously pursued. It behooves us therefore to treat with respect all cases showing the clinical symptoms of anemia, such as pallor, shortness of breath, slight edema and symptoms of stomach disturbance.

If on examination of the blood the anemia is not of a well-defined type and only 20 per cent below par, it will be wise to hold the patient under observation until the blood picture returns to normal and the clinical symptoms have cleared up. Of course it is even now a little early to pass upon the final effects of liver treatment. It may prove to have greater value in some of the secondary anemias than at present is believed. It is possible that some cases of so-called "aplastic anemia" fall under still a third group, neither pernicious nor secondary.

Fresh impetus has recently been given to the study of the anemias. Let us profit by this and renew diligently the study of all our patients who present the suggestive clinical symptoms of early anemia. The cause of pernicious anemia remains still unknown. In many cases of secondary anemia treated most carefully it may be difficult to find the cause. In the face of severe anemia do not waste valuable time in extensive laboratory proceedings to satisfy only your academic interest in classification. Treat the anemia promptly and vigorously along the lines now clearly outlined for us.

* * *

René Bine, San Francisco—My "views on the subject of anemia" are very similar to those of Doctor Pollock. Every patient presenting symptoms attributable to anemia, or whose blood, even in the absence of such symptoms, shows evidence of anemia, requires treatment. The treatment of anemia, as Doctor Pollock states, should begin immediately, and the patient studied until the primary cause is discovered. If the primary condition responsible for the anemia can be detected, and if it can be eliminated, well and good. If not, the patient will have to submit to repeated observation over a period of years.

It is a curious fact that during the past twenty years true chlorosis seems to be rapidly diminishing in frequency. Probably this is due in part to improvement in living conditions in the home, in the school, and in the entire community. This includes better ventilation, more sunlight, better food, and healthier working conditions. The working classes are no more deprived of the iron and the vitamins in their diet than of their movies, and the day of the "slavey" is, we hope, gone forever. Automobiles and the open country render "sunlight" more available.

Liver, the new "specific," is being used quite extensively. In most cases the results are striking. Time alone can tell whether by its use "pernicious anemia" can be held "in check indefinitely."

The use of the ultra-violet ray is also increasing, but we will require a great deal of careful study to appraise its value in these cases.

Absence of hydrochloric acid in the stomach contents is a common symptom of pernicious anemia, but certainly not its cause. It may exist for years without anemia, but we have always felt that these patients need careful watching, and that we should instruct them as to diet and mode of living just as carefully as we do those patients who are already anemic. Many patients have been under observation because of recognized achylia for over ten years (one for fourteen) before anemia developed. On the other hand there are also cases of achylia that have been watched for over twenty-five years without developing any symptom or sign of anemia. But we have no way of foretelling the future of these patients. When in

doubt, play trumps. Let us hope that liver remains a trump, but let us not forget that a single trump does not win the game.

* * *

F. F. Gundrum, Sacramento—"A deficiency of the blood in the living body, either a diminished quantity (as immediately after hemorrhage when it is called oligemia and is the opposite of plethora) or a diminution of some important constituent of the blood, especially hemoglobin. It then presents itself in the form of oligocythemia, achroiocythemia, microcythemia or hydremia, simply or combined." This definition brings out, I think, the reason all clinicians should be glad of the renewed interest in the subject of anemia. We are all too apt to fall into the habit of considering anemia a diminution in hemoglobin only. An impoverishment of the blood may, and no doubt does, frequently include deficiencies other than that of the coloring matter.

Anemias are relatively common in clinical practice. They are conveniently divided into those plainly secondary to some other condition and those whose origin is by no means so obvious. Addison's anemia is not to be classed in either of these groups, being well established as a disease entity, with anemia only one of the outstanding features. Gastro-intestinal and nervous changes are equally important in the diagnosis and without them the clinical picture of this disease is not complete.

Many of the common anemias are due to insufficiencies of iron or arsenic or both and are promptly relieved by the use of these drugs. Other patients with a similar blood count show very little improvement under this form of therapy, but will recover satisfactory blood values quite promptly upon rest and overfeeding while others do best with the addition of light therapy. There seems to be a fairly well recognizable type of individual who presents a picture of secondary anemia and asthenia upon whose blood picture no treatment seems to have very much effect, and whose physical state affords no easy explanation.

* * *

F. J. Lee, Los Angeles—Anemia in its severe form is a very interesting condition largely because of its association with so many different diseases. It develops most often secondary to disease in other parts of the body. Perhaps anemias differ only in degree (cytologically).

One must be familiar with the clinical and laboratory findings characteristic of anemia due to increased blood destruction, in contrast with anemia due to deficiency formation of blood. Then the diagnosis of the presence of anemia is not difficult. However, it is of very little value unless an attempt is made to discover the cause of the anemia. Check and recheck all cases of anemia rather than accept a diagnosis of undeterminate anemia. Early diagnosis is the keynote in the treatment of all anemias. A knowledge of cytology is of value, for the blood picture is a mirror of the bone marrow and its reactions.

Where a definite causative factor is found, attempts to right the condition are made. Aided by transfusion, by a liberal diet, rest, and a few drugs, one can tide these cases over until the blood-forming organs replace the deficiency.

In the treatment of the so-called primary anemias the following outline is of value:

Treat all the factors possible that directly or indirectly retard the blood-forming organs: such as (*a*) oral and dental sepsis; (*b*) intestinal parasites; (*c*) cases of called pernicious anemia with syphilis; (*d*) cases of anemia of pregnancy.

Give rest in bed if anemia is severe—diet, well balanced—ride no hobbies; and liver, raw, cooked—"fraction."

For the glossitis, nausea, vomiting, diarrhea, give one-fourth pound of liver in the morning and another one-fourth pound in the afternoon. Either with the meals or at, say 10 a. m. and 4 p. m.

Liver can be taken raw easier than cooked in many instances. Grind it up and serve in soup or orange juice.

Liver is a specific in cases of so-called pernicious anemia, if given in sufficient quantities and continued at the proper dosage.

The problem in liver treatment is to find how much of the liver or fraction must be given daily to get a change in the clinical symptoms and the blood picture. This will vary with the patient. The average return to a normal blood picture takes from one month to six weeks (clinically).

The patient will use from four to six vials of the fraction during the first week or until the blood picture is normal. Then one may find that two or four vials a week is sufficient to keep the blood picture normal.

Laboratory aid is essential to accurate treatment. The young red cells, the so-called "reticulated cells," increase 20 to 50 per cent in the first ten days of treatment. A case that does not respond will not show this reticulated cell curve or increase of young cells. If such is the case we have probably missed the diagnosis and had better recheck our findings.

(Note: The best stain for "reticulated red cells" is a cresyl blue. Count 1000 red blood cells to find the percentage. Normal blood has about one per cent of reticulated cells.)

The neurological cases—posterolateral sclerosis—will not respond to liver treatment. Nerve tissue already damaged is beyond repair. All we can hope for is to hinder further damage.

Drugs are of little value in cases of pernicious anemia. Even dilute hydrochloric acid can be discarded.

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EDITORIALS

THE ANNUAL SESSION OF THE C. M. A.—IN APRIL AT SACRAMENTO

The fifty-seventh annual session of the California Medical Association will be held in Sacramento, commencing Monday, April 30.

Members of the Association may well pause a few moments in their daily routine of professional work to ask themselves whether it would not be very much worth the while to make an effort to be present at this meeting. An excellent scientific program has been prepared and our colleagues at Sacramento promise also some very interesting entertainment.

* * *

Delegates and alternates to the House of Delegates have a special obligation in reference to this meeting because of the very important matters which will come up for consideration.

The proposed revision of the constitution and by-laws by means of which it is hoped to have rules of government in line with the best development, will demand the serious attention of the delegates.

Among other business the decision must be made as to whether or not the California Board of Medical Examiners shall continue in its present form, or in one sense lose its identity and peculiar relationship to the medical profession, by being merged and otherwise changed as one of some sixteen other California licensing boards, in a Professional Standards Department of California, which it has been proposed, should be created by the next legislature. This subject was discussed editorially in the March issue of this journal.

* * *

Of state medical meetings it may be said that rarely can days be so filled with experiences of pleasure and profit, as are these hours which are spent in exchange of fraternal and good fellowship greetings, in the intervals between the more serious scientific work with one's fellow physicians.

Some of our members have attended these meetings year after year, and in so doing have made friendships with colleagues throughout the state. That is why these members find so much additional pleasure in these reunions, and why they always may be counted upon as being among those who are almost certain to attend.

* * *

It is good to be with one's fellows in such an annual check-up on the scientific advances of the previous twelve months, and it is also profitable in every way to commune in social manner with colleagues coming from all parts of the state. If you have not gotten the annual convention habit, this will be a good year to begin. Our colleagues at Sacramento promise that we shall not be disappointed in the fifty-seventh annual session.

THE PROTECTION OF HARD-OF-HEARING AND DEAF CHILDREN

Children who have diminished hearing acuity in either ear are often handicapped throughout life, when such defects are not discovered in time; and the children given an opportunity to compensate for such defects through lip reading and modern voice-building instruction. A child suffering from hearing defects has its future handicapped, not only because of the personal annoyance resulting from the existence of this special organ deficiency, but also because the poor hearing creates inattention during the developmental and school years; and makes for a child far behind his fellows in capacity to hold his own not only in the schoolroom, but also in later years in the workshop, store or other activity. In short, such a hearing defect, if not remedied, may subject the unfortunate individual to a much lower place in the social and economic scale than would otherwise be the case.

* * *

It has been shown that children with hearing defects should come under training observation, if possible, not later than the age of two years, so that parents may take up certain training procedures in the several years before school is attended.

Throughout the country, children with such defects are unfortunately first met with in the schoolroom and the first attempts at the correction of defects are then made, and then only too often in haphazard fashion.

An interesting presentation of the work which is done in some of the California schools was given by Rodin in the November, 1927 issue of this journal, and the methods there outlined are

in a general way those which have the serious consideration of up-to-date school departments throughout the United States. Rodin called attention to the fact that in the San Francisco schools about one out of every fifty children in the age period nine to sixteen had an impairment of hearing of sufficient amount, to make desirable the giving of lip-reading instruction.

* * *

This subject has long been the object of study by both the medical and teaching professions. The last California legislature of 1927 passed a measure known as Senate Bill 342, which required "certain reports to be made concerning children with impaired hearing." Since the language of that act specifically applies to members of the medical profession, it would seem proper to quote its first section, which reads: "It shall be the duty of every attending or consulting physician, nurse, parent or guardian having charge of any minor who is totally deaf or whose hearing is impaired, to report at once to the superintendent of schools of the county, or incorporated city, or city and county of which said child is a resident, the name, age and residence of such minor."

There are three other sections. The object of the four sections of the bill is to make it possible for the state, through the persons enumerated in Section 1, to have an early contact with these children who have these hearing handicaps. Thus the proper educational measures may be instituted at the time when they will be of most value to the child, both for its schoolday life and its later adult years so that it may be given a proper chance to become a useful and happy citizen.

The attention of the members of the California Medical Association is called to this recent law, and every physician is urged to give full cooperation in this beneficent and much-needed work.

IN THEIR INITIAL EXPLOITATION, WHY DO NEW CULTS OF HEALING HAVE SO MANY GRADUATES?

From the beginning of history, cults of healing have come and gone. They will continue to come and go, but their advent and their demise could be made much less inimical to the public health if decent and proper educational safeguards were insisted upon by the state.

In our own group of non-sectarian practitioners of the healing art—the so-called regular or old school group—we lay down as a fundamental principle in the practice of the art and science of medicine, that we start out with no academic notions, hypotheses or dogmas, which would lay down beforehand the nature or the treatment of diseases.

Each of us is at liberty and is expected to utilize all facts and measures which the advances of medical or related sciences, from day to day, may bring forth.

This is the only rational approach to an understanding of any science, and because we support that principle we maintain our place as a learned profession not only in all the recognized universities of our own and other civilized countries, but also among the great masses of lay citizens of these respective lands.

Starting as we thus do with this concept of obligation to keep abreast of all advances which the industry and researches of all our fellows may bring forward, it is easy for us to go one step further in this broad knowledge which we have of the science to which we pay allegiance. We therefore believe and hold that for a proper understanding of the intricate chemical, mechanical and biologic phenomena that are met with in the human body, an adequate amount of education and training to understand and to interpret these phenomena should be required of every citizen who seeks a license from the state, so that he may be permitted to go before the public as a presumably safe and competent practitioner of the healing art.

* * *

It is just herein that our group differs so much from modern-day cults of the healing art, who utilizing modern-day press propaganda and other commercial publicity methods, are able to carry on intensive campaigns for the spreading of their teachings, so that many lay citizens who have only a superficial knowledge of the nature of disease, and of the heavy expense, hard work and years of study that is necessary for its understanding, fall a prey to these later day healing art propagandists.

* * *

It is most significant that practically all of these recently formed healing art cults, during the first years of their existence, secured a very large number of their students by having little or no requirements as to preliminary education, and very diminished quantitative and qualitative standards of professional training.

It is not to be wondered at that such groups found it easy to gain many disciples who aspired to graduate as "doctors" in their groups. For with little more than a reading, writing, and arithmetic requirement, and a comparatively small amount of money for a one or two-year term, in a day or night course curriculum to secure a so-called professional education, these cults were able to reach hundreds and thousands of prospective students under such conditions.

These cultist groups have had their largest growth in the last quarter of a century. It is during this same period that the regular profession has been demanding higher and higher standards of preliminary education and of professional training.

Today in our own and other states, for our own group graduates, a full four-year high school education, two years of collegiate liberal arts work, four years in a medical college and at least one year of hospital internship, all to be taken in accredited high schools, colleges, medical schools, and hospitals measuring up to an accept-

able standard, may be said to be the almost universal standard of our minimum educational requirements.

* * *

As we look back at the Carnegie Institution and Flexner reports, which had so much to do with creating a demand for these higher standards of professional training, it is to be regretted that we did not foresee that in permitting to go out of existence medical schools of many years of honorable existence and long lines of honorable and efficient graduates, we were making it possible for cultist groups to flaunt themselves before the public and in high-sounding language promulgate the advantages of their therapeutical measures; these schools at the same time preparing the way for hosts of persons with little or no proper preliminary education, to acquire a degree of "doctor" in this or what not, and be eligible for legal licensure as practitioners of the healing art, as much so as those who had spent years in preparation and training for the doctorate degree in medicine.

Here in California, as well as in other states, this chase for a professional degree on such a deplorable basis, still goes merrily on.

* * *

Of course it is the public that pays for this inattention to adequate standards and, unfortunately, it is often that portion of our citizenship with lesser education and discrimination, whose members fall into the nets of such poorly trained practitioners.

Our group of the healing art—the non-sectarian or so-called regular or old school practitioners—does not object to a citizen reserving for himself the right to avail himself of any method or methods of healing which to such a citizen seem desirable.

Our group of practitioners does contend, however, that the state is blameworthy if it sanctions the licensing of any practitioner of the healing art, be he of our own or any other group, who has not had that proper preliminary education and professional training, that is presumably a necessary prerequisite to make himself a safe individual to hold himself before the public as a practitioner of the healing art; and very often in that capacity to hold in his hands the health, prosperity, happiness, and even the lives of the lay fellows who come to him when they are suffering from disease or injury.

* * *

It is hardly conceivable in this day and generation that in a state such as California that a cross-section of the opinion of the citizenship of the state would give a majority opinion in favor of a preliminary education less than a full four-year high school course for every individual aspiring to secure a license as a doctor in any phase or branch of the healing art.

The cultist schools and exponents profess to have that and even higher standards of preliminary education. They should not therefore oppose this minimum high school standard in case it were brought forward.

* * *

In some states the recent basic science laws aim to utilize this sensible high school requirement as the minimum standard of preliminary education. These basic science laws were discussed in this column in the October issue of California and Western Medicine.

Would it not be wise for the members of the California Medical Association to give the subject careful consideration? Can a more practical method of elevating the standards of all practitioners of the healing art be brought forward? It is our belief that, as the years go by, an increasing number of states in the Union will adopt this basic standard of preliminary education, and that California should take up the consideration of some such measure at an early day.

MEDICAL ALTRUISM

The president of the Santa Barbara branch of the American Association for Medical Progress, Mr. George E. Coleman, has issued a pamphlet entitled "Some Medical Discoveries of 1927" that has been distributed among its members and that is worthy of wide publicity. Under the News column of the Miscellany Department of this issue of California and Western Medicine are published excerpts.

The altruism of the medical profession was never more strongly shown than is shown in this pamphlet. Each successful result has been obtained after months of painstaking research has been freely given publicity—simply that upon the foundation so laid further discoveries and advances may be made available for the benefit and betterment of mankind.

What a contrast to the secrecy that surrounds a commercial discovery—to the safeguarding through the patent office of the manufacture and use of any idea that may have a monetary value!

Research men who devote their lives to this department of medicine are deserving of highest honor and of loyal support from their medical confrères and from every layman who can understand and appreciate the disinterestedness of the work and the amazing results that they have obtained. Every reader of California and Western Medicine should turn to the News column and review the medical accomplishments of the year 1927, on page 544.

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Pediatrics

Measles and Hemotherapy—Among the acute infections, measles has exacted a high toll among children. The rapidity of spread of the infection, due to the peculiar symptomatology, has stimulated scientific observers to seek the causative agent, that a serum for cure and prevention might be found.

The use of whole human blood has been mentioned in these columns [1] in the treatment of various conditions in pediatrics. The whole blood of adults or the serum of the blood of convalescent measles' patients has been used by several investigators with encouraging results, especially if administered in the first eight days after exposure.

Spencer, of the Willard Parker Hospital of New York,[2] has tabulated massed experience in the use of this type of serum. He reports that of 3721 cases so treated, 3237 were completely protected, 434 had modified measles, and only 50 had unmodified measles. In a series of twenty cases treated after the eighth day of exposure, 13 had modified and only 7 unmodified measles. These figures are well worth careful consideration, particularly in institutions for infants and children. However, in private practice without laboratory facilities, the obtaining of sterile serum from Wassermann-free convalescent patients, is only occasionally possible.

If measles occurs in a family of more than one child, the simplest method is to inject 10 or 15 cc. of the whole blood of the convalescent patient into other children who have been exposed. No typing is necessary and the question of Wassermann reaction is unimportant. Forbes and Green [3] report their results with that procedure. Inasmuch as the full amount of immune bodies is not complete inside of a week after the temperature is normal, this method would be of only limited value, perhaps only modifying the disease in those exposed and later infected. But it has definite value in lessening the severity of the disease and possibly the complications which frequently develop.

The dosage of convalescent serum is small, varying from 2.5 cc. for a child 5 years old or younger, and exposed within four days, to 10 cc. for the same age if exposed not over seven days previously. The treatment dose of adult serum for a child 5 years or under is the "serum or plasma from 30 to 60 cc. of blood." "This should be doubled for children from 5 to 10 years, and for those over 10 years the dose must be greatly increased." (Spencer). The above applies to a family where one of the parents is used as the donor or other adult known to be Wassermann free. All adults, as a general rule, have had measles as children, hence they are supposed to have antibodies in their blood. It would be well to secure this information prior to taking the blood.

The blood can be used whole, but the bulk of 30 to 60 cc. or more, injected subcutaneously or intramuscularly, is necessarily painful, hence the recommendation to use the serum. However, the absorption is rapid and the loose connective tissue of the axilla or abdominal wall will accommodate large quantities of fluids. The addition of sodium citrate to check the clotting of the blood while it is being administered is recommended.

The use of commercial serums of animals inoculated with various bacteria which are supposed to cause measles is still in the experimental stage. Undoubtedly the time will come when we shall have such a serum, but until then we shall have to use the blood serum or whole blood of the human who has had the disease and recovered.

A. J. Scott, Los Angeles.

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Cardiovascular Disorders

Circulation in the Smaller Vessels—Our knowledge of the function of the smaller vessels in certain inaccessible regions has been increased recently by several valuable observations, some of which confirmed and some disproved previous conceptions. It is important that such knowledge should be based on accurate findings, because of the recent interest in diseases of the peripheral vessels in both surgical and medical fields. The apparatus used for these observations embodied some recent developments in electrophysics.

Wearn, Ernstene, Barr and German, in Boston, made direct observations on the pulmonary capillaries. The number of capillaries functioning vary in proportion to the work thrown upon them and upon the systemic blood pressure. Especially interesting was the action of adrenalin,

which produced dilatation or increased number of open capillaries instead of the expected constriction as found in the peripheral arterioles.

The pulmonary circulation rate is being studied by Blumgart and Weiss of Boston. They inject radium emanation seeds into an arm vein and record their passage through the great vessels. Using the principle that ionized gas transmits a current and that radiation ionizes the gas, they appropriately located gas chambers over the greater vessels in windows in a lead screen on the chest wall, and recorded the currents passing through these chambers.

The circulation rate in congestive heart failure was found to be diminished as was generally believed. The causes of the cyanosis in emphysema was found not to be due to pulmonary circulation rate but rather to structural changes in the alveolar walls.

Pulmonary circulation rate measurement gives us a knowledge of the quantity of blood in the lungs, and suggests means of solving the cause of such problems as acute edema of the lungs.

The brain is another region where the vascular behavior has not been directly studied. Cobb, Forbes, and Wolff of Boston directly observed the capillaries and minor vessels on the surface of the cerebral hemispheres. They demonstrated that the caliber of these vessels was regulated by an intrinsic mechanism similar to the nervous and muscular vascular control found elsewhere in the body. Adrenalin caused sympathetic stimulation and vascular contraction as it did in other peripheral arteries. Other drugs influencing vessel caliber were likewise studied.

Velocity of the pulse wave in the peripheral arteries has recently been quite accurately recorded by Turner and Hermann of New Orleans. They used an ionizing helium lamp mechanism devised by Turner, which records currents produced by microphone reception of the wave. They thought that they were able by this method to dissociate the elements of pulse wave velocity, namely, artery caliber and elasticity as well as blood pressure, and to evaluate the functional efficiency of the peripheral arteries.

John J. Sampson, San Francisco.

Radiology

The Status of the Roentgenologist—"Seeing is believing" is an old adage. Nowhere is this more easily exemplified than in medicine, for sight is relied on more and more in arriving at a diagnosis. Through the advent of the x-ray the hidden recesses of the body have been opened to inspection. As time has gone on, especially during the last decade, greater refinements in technique, associated with the study of correlated postmortem findings, has enabled us to visualize and recognize accurately certain pathologic processes not heretofore suspected prior to death. A complete evaluation of the advances in modern everyday diagnosis made possible through the aid of Roentgen's discovery is impossible, but it is sufficient to say that the clinician who attempts practice of any kind without ready access to it is practicing under a very distinct handicap. Even the laity have been educated to the stage where they frequently request x-ray examination prior to treatment.

Early diagnosis of obscure diseases is an accomplished fact. McVicar of the Mayo Clinic, in speaking of carcinoma of the stomach, says: "In our opinion roentgenologic examination excels any and all other means of recognizing cancer early." The same is true of gastric and duodenal ulcers, colonic diverticuli, pulmonary conditions, bone disease, and others. Recently in a discussion before the Southern California Medical Society, Snure showed pregnancy of the ninth week, through demonstration of the hazy bony shadows of the fetus, before concrete evidence of its presence by the usual clinical signs. Of late, gall bladder visualization has opened new fields in the diagnosis and physiology of liver function. These are instances of the daily use of the x-ray. It enables one to visualize, but the interpretation of the visualized picture is more difficult. The taking of films and the production of shadow pictures has been so simplified that almost anyone can operate a machine, consequently findings are often interpreted by men who are not qualified to interpret. Faulty diagnosis is not so often due to failure of the action of the ray on the film as to misinterpretation of the picture taken. This is the reason for the radiologist. First of all he must be a good technician who knows the mechanics of his machines, and the physics involved in the production of shadows, for in some patients the work must be done with a ray of minimum penetration, while in others a ray of maximum penetration is necessary to bring out detail which will otherwise be missed. Next he must be well grounded in the medical sciences of anatomy, physiology and pathology, so as to know the normal and the abnormal in shadow form. Finally he must be a good physician to correlate symptomatology with demonstrated pathology, for every day he is called upon to interpret the shadows which he sees as normal or abnormal. Even with this groundwork, mistakes are made, for no two individuals are exactly alike anatomically, nor does pathology always duplicate itself in a second individual. Seeing is believing, but one must know what is seen before one can believe.

Granting that the roentgenologist has surmounted these limitations, he is, then, one of the "key men" of medicine today. He, with the clinical pathologist, confirms or rules out the diagnoses of his associates; he actually, and sometimes accidentally, demonstrates early and unsuspected lesions which have produced negligible or minimal symptoms. On his decision frequently rests the prognosis and treatment of the patient; without him diagnostic medicine would not be on the sound scientific basis that it is. The time has passed when he is a technician pure and simple. He is a consultant to all the specialties and should be looked upon as such.

Sir Humphry Rolleston in his MacKenzie Davidson lecture says: "It is natural that there

should be a wholesome rivalry between the pure clinicians and the radiologists analogous to that between the clinicians and the laboratory workers as to who shall be regarded as the decisive makers of the diagnosis; it is therefore important that clinicians and radiologists should be in constant touch and consult frequently on equal terms, each thus acquiring the special knowledge and perspective of the other. Like the bacteriologist, the radiologist should form part of the team for clinical practice and research, and should not be segregated in his department. The radiologist is the helpful colleague of the clinician, and they are both judged as regards their accuracy or mistakes by the conditions found on the operating table or in the postmortem room; it is therefore most essential that the radiologist should, like the clinician, follow through to final demonstration the cases on which he has expressed an opinion, and be imbued with pathological knowledge."

In the establishment of a section on radiology a year ago by the American Medical Association, cognizance was taken of this. From a technical standpoint the radiologist is a true specialist, but at the same time he is a clinical adviser to each of the severally recognized subdivisions of medicine. His practice does not come directly from the laity, but is essentially one referred by brother practitioners who send their patients for expert personal opinion.

Orville N. Meland, Los Angeles.

Otorhinolaryngology

Otitis Media in Small Children—Examination of the tympanic membrane ought to be a part of the routine examination of all young children. Every pediatrician and otologist has had the experience of having a child held for observation, or treated for various conditions, discharge unexpectedly an amount of pus from the ear, immediately followed by a decided improvement of all other symptoms. Otitis media is frequently met with not only in infants, but in children old enough to talk and tell their troubles. Many of us have seen abscessed ears where no pain was complained of. These facts serve to impress us with the necessity for routine otological examination and with the fact that various symptoms referable to the nervous, respiratory and gastro-intestinal systems may be produced by acute purulent otitis media.

Dean McLierle under the caption of "Otitis Media in Infants," in the September issue of the *Annals of Otology, Rhinology and Laryngology,* very ably presents a convincing number of these cases, and especially of those showing gastro-intestinal disturbances. He points out the fact that it is quite possible to have a purulent mastoid infection with very little, if any, infection in the tympanic cavity; that the pus may be blocked off within the mastoid cavity, and the infection of the tympanum clear up. That this does happen occasionally, I am sure, for I have had that experience; but if it is very frequent, I have been guilty of overlooking a goodly number. The gastro-intestinal system of the child is certainly delicately balanced and all pediatricians frequently see disturbances here associated with acute purulent otitis media. I believe we are inclined to think the abscessed ear a complication of the gastro-intestinal disturbance, when it is in fact the causative factor.

Alden and Lyman reported seventy consecutive autopsies on infants who had died from infantile atrophy and infantile diarrhea, and stated that suppuration of the middle ear was found in all the cases. Thirty cases had been diagnosed as acute otitis media in life, while forty additional ones were found at autopsy. Many of these little patients have mastoid involvement undiagnosed, with gastro-intestinal symptoms in which frequent slimy, greenish stools are present and profound dehydration obtains. I have seen cases where there was a spontaneous external rupture of the mastoid, and still the middle ear involvement was considered of secondary importance.

The question of diagnosis is not always easy in these little patients, at least in cases of mastoid involvement which require mastoidectomy. Examination of the tympanic membrane, which may be obscured by débris of the external auditory canal of a putty appearance, due to an infection of the skin of the auditory canal, is not simple. This must be thoroughly washed and wiped out, without making much pressure upon the tympanic membrane. Again the tympanic membrane may be, and frequently is, covered with a white layer of exfoliated epithelium that in itself is characteristic of acute purulent otitis media. It may not look red and inflamed and to the inexperienced eye is viewed as the normal tympanic membrane. In cases where mastoiditis is suspected, greater difficulty will be met even for the experienced otologist; but perhaps a fair working rule to follow would be, where an x-ray shows one or both mastoids cloudy, with one or both ears draining profusely for several days, without relief of symptoms, a severe mastoid infection is probably present, and if the gastro-intestinal or temperature symptoms are urgent, a mastoidectomy is indicated.

If the tympanic membrane has not ruptured or has not been incised, I believe it safe counsel to say when in doubt, sterilize the external auditory canal and thoroughly incise the tympanic membrane. If an occasional tympanic membrane is opened unnecessarily it will quickly heal if antiseptic precautions have been taken, and no harm will be done.

In view of the fact that gastro-intestinal and other symptoms are frequently the result of an acute purulent otitis media, we wish again to emphasize the importance of examination of the tympanic membrane as a part of the routine examination of all young children.

Clinton A. Burrows, Los Angeles.

S. A. K. WILSON
London

H. GIDEON WELLS
Chicago

RAY LYMAN WILBUR
Palo Alto

WALTMAN WALTERS
Minnesota

GUNTHER W. NAGEL
Minnesota

INVITED SPEAKERS

S. A. Kinnier Wilson, M. D., Neurologist to the King's College Hospital, University of London, will address the Second General Meeting on Wednesday, May 2, at 10 a. m. on "Sudden Cerebral Lesions." Doctor Wilson is also to speak to the Neuropsychiatry Section held in St. Paul's Church on Thursday, May 3, at 2:30 on "Narcolepsy."

H. Gideon Wells, M. D., Associate Professor of Pathology at the University of Chicago, will speak at the Third General Meeting on Thursday, May 3, at 10 a. m. on "Adipose Tissue"; and at the Fourth General Meeting on Thursday evening at 8 p. m. on "What the Layman Wants to Know About Cancer."

Ray Lyman Wilbur, M. D., President of Stanford University, will speak at the Second General Session on Wednesday, May 2, at 10 a. m. on "The Cost of a Medical Education."

Waltman Walters, M. D., of the Mayo Clinic, Rochester, Minnesota, will address the Second General Meeting on Wednesday, May 2, at 10 a. m. on "Acute Duodenal Fistula."

Charles S. Vivian, M. D., of Phoenix, Arizona, will speak on "Experience with the Colling's Electrotome" before the Urology Section, April 30, at 2:30 p. m.

Gunther W. Nagel, M. D., Mayo Clinic, Rochester, will talk on "Duodenitis" before the General Surgery Section on Wednesday, May 2, at 2:30 p. m.

Paul Arthur O'Leary, M. D., Assistant Professor of Dermatology at Mayo Clinic, Rochester, will speak before the Dermatology Section on "Four Years' Observation with Malaria Therapy in Patients with Neurosyphilis," on Wednesday, May 2, at 2:30 p. m.

Program

THE FIFTY-SEVENTH ANNUAL SESSION
of the
CALIFORNIA MEDICAL ASSOCIATION

TO BE HELD
at
SACRAMENTO
CALIFORNIA

APRIL 30,
MAY 1, 2, 3
1928

SENATOR HOTEL—HEADQUARTERS

OFFICERS AND COMMITTEES, 1928

PERCY T. PHILLIPS, Santa Cruz, President
WILLIAM H. KIGER, Los Angeles, President-Elect
T. HENSHAW KELLY, San Francisco, Vice-President
EMMA W. POPE, San Francisco, Secretary and Editor
GEORGE H. KRESS, Editor
HARTLEY F. PEART, San Francisco, General Counsel
HUBERT T. MORROW, Los Angeles, Assistant General Counsel

COUNCILORS

First District
Lyell C. Kinney, San Diego (1930)
San Diego, Riverside, San Bernardino, and Imperial Counties

Second District
William Duffield, Los Angeles (1928)
Los Angeles, Santa Barbara, Ventura, and Orange Counties

Third District
William H. Bingaman, Salinas (1929)
San Luis Obispo and Monterey Counties

Fourth District
Fred R. DeLappe, Modesto (1928)
Fresno, Kern, Kings, Tuolumne, Merced, Mariposa, Madera, Tulare, and Stanislaus Counties

Fifth District
John Hunt Shephard, San Jose (1929)
Santa Clara, San Mateo, San Benito, and Santa Cruz Counties

Sixth District
Walter B. Coffey, San Francisco (1929)
San Francisco County

Seventh District
Oliver D. Hamlin, Oakland (1929)
Alameda, Contra Costa, San Joaquin, and Calaveras Counties

Eighth District
Junius B. Harris, Sacramento (1928)
Sacramento, Amador, El Dorado, Alpine, Placer, Nevada, Yuba, Sutter, Sierra, Yolo, Butte, Plumas, Lassen, Mono, Inyo, Glenn, Colusa, Tehama, Shasta, Modoc, and Siskiyou Counties

Ninth District
Henry S. Rogers, Petaluma (1929)
Marin, Sonoma, Lake, Mendocino, Solano, Napa, Del Norte, Humboldt, and Trinity Counties

Councilors at Large
Robert A. Peers, Colfax (1928)
Joseph Catton, San Francisco (1929)
George H. Kress, Los Angeles (1929)
Harlan Shoemaker, Los Angeles (1929)
Morton R. Gibbons, San Francisco (1930), Chairman
Charles L. Curtiss, Redlands (1929)

DELEGATES AND ALTERNATES TO A. M. A.

Dudley Smith Oakland	(1928-1929)	Walter B. Coffey San Francisco
Albert Soiland Los Angeles	(1928-1929)	William H. Gilbert Los Angeles
Martha Welpton San Diego	(1928-1929)	Eleanor Seymour Los Angeles
Victor Vecki San Francisco	(1928)	William E. Stevens San Francisco
Percy T. Magan Los Angeles	(1928)	Chas. D. Lockwood Pasadena

COMMITTEES

Executive Committee
O. D. Hamlin, Chairman — Morton R. Gibbons
William H. Kiger — Percy T. Phillips
T. Henshaw Kelly — George H. Kress
Emma W. Pope

Committee on Scientific Program
Emma W. Pope, Chairman
Lemuel P. Adams (1929), Oakland — Leo Eloesser (1928), San Francisco
Robert V. Day (1930), Monrovia — J. Marion Read (1928), San Francisco

Auditing Committee
Oliver D. Hamlin, Chairman — T. Henshaw Kelly

Committee on Arrangements
Junius B. Harris, Chairman
Robert A. Peers — Fred R. Fairchild

Finance—Frederick N. Scatena, Chairman; Hans Schluter.
Scientific Exhibits—Robert Pearson.
Commercial Exhibits—George A. Briggs.
Entertainment—E. S. Babcock, Chairman; H. W. Zimmerman.
Entertainment of Visiting Ladies—Mrs. F. F. Gundrum.
Golf and Hotels—Gustave Wilson.
Trap Shoot—C. E. Schoff.
Invited Speakers—F. F. Gundrum.

Publicity for 1928 Meeting
Junius B. Harris — Robert A. Peers

1928 HOUSE OF DELEGATES

Membership

OFFICERS

Percy T. Phillips, Santa Cruz.....President
William H. Kiger, Los Angeles.....President-Elect
T. Henshaw Kelly, San Francisco.....Vice-President

COUNCILORS

Lyell C. Kinney, San Diego (1930).....First District
William Duffield, Los Angeles (1928).....Second District
William H. Bingaman, Salinas (1929).....Third District
Fred R. DeLappe, Modesto (1928).....Fourth District
John Hunt Shephard, San Jose (1929).....Fifth District
Walter B. Coffey, San Francisco (1929).....Sixth District
Oliver D. Hamlin, Oakland (1929).....Seventh District
Junius B. Harris, Sacramento (1928).....Eighth District
Henry S. Rogers, Petaluma (1929).....Ninth District
Robert A. Peers, Colfax (1928).....At Large
Joseph Catton, San Francisco (1929).....At Large
George H. Kress, Los Angeles (1929).....At Large
Harlan Shoemaker, Los Angeles (1929).....At Large
Morton R. Gibbons, San Francisco (1930).....At Large
Charles L. Curtiss, Redlands (1929).....At Large

DELEGATES and ALTERNATES

Alameda County (8)

F. S. Baxter	A. A. Alexander
F. H. Bowles	W. B. Allen
W. L. Channell	H. H. Hitchcock
C. A. De Puy	S. A. Jelte
E. N. Ewer	J. W. Sherrick
J. K. Hamilton	H. J. Templeton
Gertrude Moore	R. G. Van Nuys
D. N. Richards	

Butte County (1)

D. H. Moulton	P. L. Hamilton

Contra Costa County (1)

J. M. McCullough	L. St. John Hely

Fresno County (2)

Thomas F. Madden	W. G. Milholland
C. O. Mitchell	A. E. Anderson

Glenn County (1)

T. H. Brown	Etta S. Lund

Humboldt County (1)

Orris R. Myers	W. J. Quinn

Imperial County (1)

E. Le Baron	B. R. Davidson

Kern County (1)

F. A. Hamlin	Joseph Smith

Lassen-Plumas County (1)

S. M. Sproat	James P. Warren

Los Angeles County (31)

A. B. Cooke	J. N. Van Meter
Russell Sands	William B. Bowman
W. H. Gilbert	Roy E. Thomas
F. S. Dillingham	Henry N. Shaw
Edward W. Hayes	William Molony
Philip H. Stephens	W. J. McKenna
Leroy B. Sherry	Sterling Pierce
Fitch C. E. Mattison	C. H. Weaver
W. A. Swim	John W. Crossan
John H. Breyer	Paul A. Ferrier
James F. Percy	R. G. Taylor
Elmer E. Kelly	Karl Dieterle
Foster K. Collins	J. G. Lynch
Eleanor C. Seymour	A. E. Gallant
Albert Soiland	Sven Lokrantz
Irving R. Bancroft	Gerald F. Smith
John V. Barrow	H. B. Tebbetts
Fred B. Clarke	George Thomason
W. W. Hutchinson	M. H. Ross
George G. Hunter	H. Wilson Levengood
Joseph M. King	Rolla G. Karshner
E. Earl Moody	Carl R. Howson
W. S. Mortensen	H. P. Wilson
Lewis D. Remington	W. L. Huggins
Wilbur Parker	Percy T. Magan
Lyle G. McNeile	R. Manning Clarke
C. G. Toland	R. R. Montgomery
C. N. Suttner	Thomas Chalmers Myers
Robert V. Day	Roy W. Hammack
Edward M. Pallette	Walter P. Bliss
George D. Stilson	H. A. Rosenkranz

Marin County (1)

C. F. Larson	R. G. Dufficy

Mendocino County (1)

Donald R. Smith	L. K. Van Allen

Merced County (1)

F. O. Lien	A. S. Parker

Monterey County (1)

W. M. Gratiot	H. M. Hoyt

Napa County (1)

M. M. Booth	W. L. Blodgett

Orange County (2)

Harry E. Zaiser	J. I. Clark
R. A. Cushman	D. C. Cowles

Placer County (1)

C. E. Lewis	J. A. Russell

Riverside County (1)

Joseph W. Cook	T. A. Card

Sacramento County (2)

R. N. Bramhall	Frank B. Reardon
J. R. Snyder	George Foster

San Benito County (1)

Earl W. Hill	Emma E. McKay

San Bernardino County (2)

G. G. Moseley	E. J. Eytinge
S. B. Richards	Walter Pritchard

San Diego County (4)

Mott H. Arnold	C. E. Howard
Thomas O. Burger	F. L. Macpherson
Will H. Potter	C. E. Rees
Martha Welpton	Lillian B. Mahan

San Francisco County (17)

Elbridge J. Best	Robert R. Newell
Walter W. Boardman	Guillaume D. Delprat
LeRoy Brooks	William Dock
Harold Brunn	Philip K. Gilman
Lloyd Bryan	Henry Harris
Edmund Butler	Irving S. Ingber
Wm. R. P. Clark	Hans Lisser
Henry Walter Gibbons	Robert C. Martin
John H. Graves	Harry R. Oliver
Sol Hyman	Karl L. Schaupp
Alexander S. Keenan	Daniel W. Sooy
Eugene S. Kilgore	Harry Spiro
William Palmer Lucas	I. Walton Thorne
Howard C. Naffziger	Joseph M. Toner
Langley Porter	Victor G. Vecki
Henry A. L. Ryfkogel	Emma K. Willits
Alfred J. Zobel	J. Homer Woolsey

San Joaquin County (2)

J. W. Barnes	F. J. Conzelmann
B. J. Powell	C. V. Thompson

San Luis Obispo County (1)

G. David Kelker	G. L. Sobey

San Mateo County (1)

W. O. Calloway	H. W. Macomber

Santa Barbara County (1)

H. J. Ullmann	F. R. Nuzum

Santa Clara County (2)

L. Boonshaft	L. M. Rose
N. H. Bullock	H. E. Dahleen

Santa Cruz County (1)

A. L. Phillips	D. S. Woodard

Shasta County (1)

Ferdinand Stabel	Earnest Dozier

Siskiyou County (1)

Cordes W. Ankele	R. H. Heaney

Solano County (1)

John W. Green	E. A. Peterson

Sonoma County (1)

Arthur G. Lumsden	J. Walter Seawell

Stanislaus County (1)

E. V. Falk	R. E. Maxwell

Tehama County (1)

Frank L. Doane	John H. Belyea

Tulare County (1)

E. R. Zumwalt	W. W. Tourtillott

Tuolumne County (1)

Homer D. Rose	John P. Sweeney

Ventura County (1)

J. Bianchi	F. E. Blaisdell

Yolo County (1)

Fred R. Fairchild	George W. Desrosier

Yuba-Sutter County (1)

John A. Duncan	G. S. Delamere

HOUSE OF DELEGATES MEETINGS

Program

FIRST MEETING

Memorial Hall, Auditorium, J Street, between 15th and 16th Streets, Sacramento, Monday, April 30, 8 p. m.

Open to Members of the California Medical Association

ORDER OF BUSINESS

1. Call to order.
2. Roll call.
3. Report of President, Percy T. Phillips.
4. Appointment of the Reference Committee by the President.
5. Report of the Council, Morton R. Gibbons, Chairman (presented before the First General Meeting).
6. Report of the Committee on Scientific Program, Emma W. Pope, Chairman.
7. Report of the Auditing Committee, Oliver D. Hamlin, chairman.
8. Report of Secretary, Emma W. Pope.
9. Report of the Editors, George H. Kress, Emma W. Pope.
10. Report of the General Counsel, Hartley F. Peart.
11. Unfinished business.
12. New business. (Introduction of Resolutions.)
13. Reading and adoption of minutes.

Adjournment.

SECOND MEETING

Memorial Hall, Auditorium, J Street, between 15th and 16th Streets, Sacramento, Wednesday, May 2, at 8 p. m.

Open to Members of the California Medical Association

ORDER OF BUSINESS

1. Call to order.
2. Roll call.
3. Announcement of the place of session, 1929.
4. Election of:
   - (a) President-Elect
   - (b) Vice-President
   - (c) Councilors
     - Second District—Incumbent, William Duffield, Los Angeles (1928).
     - Fourth District—Incumbent, Fred R. De Lappe, Modesto (1928).
     - Eighth District—Incumbent, Junius B. Harris, Sacramento (1928).
     - Councilors at Large—Incumbent, Robert A. Peers, Colfax (1928).
   - (d) Members on Program Committee:
     - Incumbent—Leo Eloesser, San Francisco (1928).
     - Incumbent—J. Marion Read, San Francisco ('28).
   - (e) Delegates and Alternates to A. M. A.
     Incumbents:

Delegates		Alternates
Victor Vecki San Francisco	(1928)	William E. Stevens San Francisco
Percy T. Magan Los Angeles	(1928)	Charles D. Lockwood Pasadena

5. Report of Reference Committee.
6. Presentation of President.
7. Presentation of President-Elect.
8. Reading and adoption of minutes.

Adjournment.

GENERAL INFORMATION*

Registration and Information—The registration and information desk is located in the Lobby, Auditorium. All persons attending the convention, whether members or not, are requested to register immediately on arrival. Beginning Monday, April 30, registration secretaries will be on duty daily from 9 a. m. until 5 p. m.

Guests and Visitors—All guests and visitors are requested to register. All General Meetings and scientific meetings are open to visitors and guests.

Badges—Four kinds of badges will be issued by the registration bureau:

1. Members—Only active, associate, affiliate or honorary members of the California Medical Association will be issued the usual membership badge. Members must show membership cards when they register.

2. Guest—A special badge will be issued to all fraternal delegates, visiting physicians, physiotherapists, medical social workers, nurses, and other technical specialists who are attending the 1928 Session.

3. Delegates and Alternates—The usual official badge is provided for this purpose, and will be issued only to persons authorized to wear it.

4. Councilors—An official badge is provided for all officers and members of the Council.

Membership Cards—Every member in good standing in the California Medical Association has been issued an official membership card for 1928. Present membership card at Registration Desk.

Suggestions and Constructive Criticism—The officers and committees have tried to do everything possible to make the Session a success. Suggestions and constructive criticism calculated to make future sessions more useful will be welcomed by any of the officers. Complaints of whatever character should be made to the registration desk, where they will receive attention.

Social Program—The social program is in the hands of the Entertainment Committee, and is published at the end of this program.

Press Representatives—Accredited press representatives are welcome, and they will be accorded every possible courtesy.

Publicity—All publicity is in the hands of the Publicity Committee. It is requested that all persons having matter of "news" value report it to this committee. It is particularly requested that all "news" about any phase of the convention be given out through the official committee, and in no other way.

Exhibits—Only advertisers in California and Western Medicine are permitted to exhibit at the annual meeting.

Rules Regarding Papers and Discussions at the State Meeting—Upon recommendation of the Executive Committee, the following rules regarding papers have been adopted by the Council:

1. The maximum time that may be consumed by any paper is fifteen minutes, provided that not to exceed ten minutes' latitude may be allowed invited guests at the discretion of the presiding chairman.

2. Motions from the floor to extend the time of an author may not be entertained by the presiding officer.

3. The maximum time permitted any individual to discuss a paper is four minutes. This also applies to the author in closing his discussion. No speaker may discuss more than once any one subject.

4. A copy of each and every paper presented at the State meeting must be in the hands of the chairman or secretary of the section or in the hands of the general secretary before the paper is presented.

5. All papers read at the Annual Meeting shall be published in full in California and Western Medicine as soon after the meeting as space will permit, or at the option of the author, an abstract of the paper of about one column in length shall be published as soon as possible after the meeting with reprints in full of the entire paper, (the cost of setting up type for the reprint to be borne by the Association, and all other costs to be borne by the author.)

6. Articles are accepted for publication on condition that they are contributed **solely** to California and Western Medicine. Authors desiring to publish their papers elsewhere than in the Journal may have their manuscripts returned to them upon written request to the state secretary.

7. No paper will be accepted by the General Program Committee nor by Section Program Committees unless accompanied by a synopsis of not to exceed fifty words.

8. Papers shall not be "read by title."

9. No member may present more than one paper at any State Meeting, provided that a member may be a collaborator on more than one paper, if these papers are presented by different authors.

10. Failure on the part of an author to present a paper precludes acceptance of future papers from such author for a period of two years, unless the author explains to the satisfaction of the Executive Committee his inability to fulfill his obligation.

* See page 528 for Entertainment Program, Golf Tournament, etc.

DIAGRAM OF MEETINGS—GENERAL AND SECTION

		Little Theater	Memorial Hall	Church	Room A	Room B	Room C	Room D
Monday April 30	10-12:30	First General Meeting—Presidential Address and Committee Reports in the Main Auditorium						
	2:30	General Medicine	General Surgery	Obstetrics	Dermatology	Industrial Medicine and Surgery	Urology	
	8-10	First House of Delegates—Memorial Hall—All C. M. A. members invited						
Tuesday May 1	10-12:30	Morning devoted to entertainment—golf tournament, trap shoot, etc.						
	2:30	General Medicine	Industrial Medicine and Surgery	Gynecology	Anesthesiology	Radiology	Pathology	Neuropsychiatry
	8:00	Dinner Dance—Main Dining Room—Hotel Senator						
Wednesday May 2	10-12:30	Second General Meeting—Invited Guests—Main Auditorium						
	2:30	*Pediatric	General Surgery	Dermatology	Neuropsychiatry	Eye, Ear, Nose, and Throat	Urology	Radiology
	8-10	Second House of Delegates—Memorial Hall—All C. M. A. members invited						
Thursday May 3	10-12:30	Third General Meeting—Invited Guests—Main Auditorium						
	2:30	General Medicine	General Surgery	Neuropsychiatry	Anesthesiology	Eye, Ear Nose, and Throat	Pathology	
	8-10	Fourth General Meeting—Public Health Meeting—Main Auditorium						

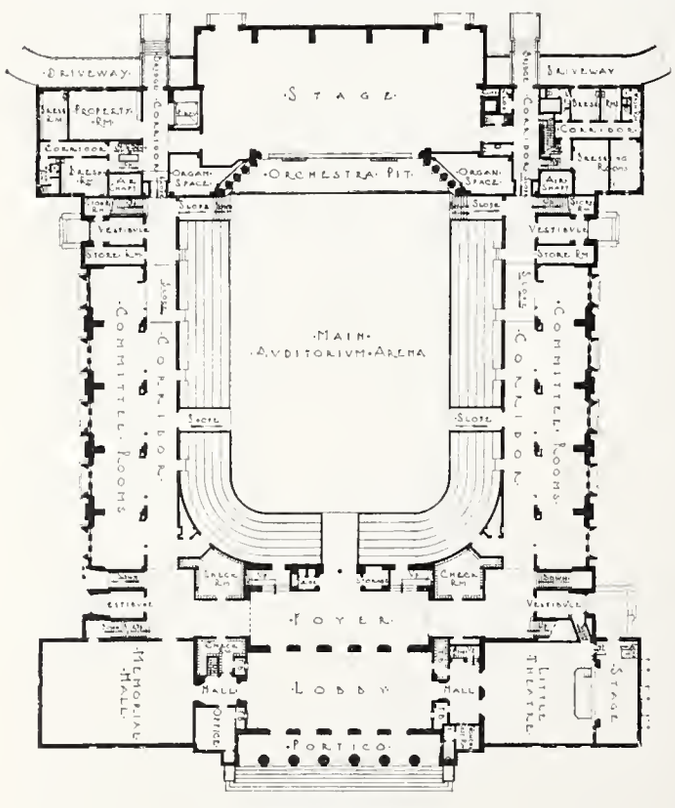
SCIENTIFIC EXHIBITS

Room E:

Motion pictures of living animals' hearts—Harry Spiro, M. D.; William W. Newman, M. D.

Memorial Hall:

1. Drawings—Ralph R. Sweet.
2. Exhibit by Charles E. von Geldern, M. D.
3. Demonstration of gall-bladder disease with one hundred mounted specimens—Stanley H. Mentzer, M. D.
4. Exhibit by the Cardiac Committee of the California Tuberculosis Association—Specimens and drawings; electrocardiograms and electrical stethoscope; moving-picture films in Room E—William Kerr, M. D.



First Floor Plan

Auditorium, J Street, between 15th and 16th

MEETINGS, DINNERS AND LUNCHEONS

Meetings of the House of Delegates—Monday and Wednesday evenings, April 30 and May 2, at 8 p. m. in Memorial Hall, Auditorium.

Council Meetings, Suite 221, Hotel Senator:

First Meeting—Sunday, April 29, at 8 p. m.
Second Meeting—Monday, April 30, at 2:30 p. m.
Third Meeting—Tuesday, May 1, at 2:30 p. m.
Fourth Meeting—Wednesday, May 2, at 2:30 p. m.
Fifth Meeting—Thursday, May 3, at 2:30 p. m.

General Meetings—The public is invited to attend all General Meetings:

Monday, 10 a. m. to 12:30 p. m.—Presidential Addresses, main Auditorium.

Wednesday, 10 a. m. to 12:30 p. m.—Addresses, invited guests, main Auditorium.

Thursday, 10 a. m. to 12:30 p. m.—Addresses, invited guests, main Auditorium.

Thursday, 8 p. m.—Public Health Meeting, main Auditorium.

President's Dinner and Dance—Tuesday evening, ballroom, Hotel Senator.

Secretaries' Luncheon—Thursday, 12:30 to 2 p. m., Hotel Senator, Room 225.

Presidents and secretaries of constituent societies are requested to be present at a luncheon to be held at Hotel Senator on Thursday at 12:30. Please make your reservations for this luncheon at the registration desk as early as possible.

Program Committee and Section Officers' Luncheon—Wednesday, 12:30 to 2:30 p. m., Hotel Senator, Room 225.

The Program Committee and all incoming and outgoing section secretaries and chairmen are invited to attend this luncheon. Please make reservations at the registration desk.

* Clinic on Pediatrics: Thursday morning, May 3, Sutter Hospital, Twenty-Eighth and L Streets.

GENERAL MEETINGS

Main Auditorium—J Street, between 15th and 16th Streets

FIRST GENERAL MEETING

Monday, April 30, 10 a. m.

1. *Invocation*—Rev. William H. Hermitage, St. Paul Episcopal Church.
2. *Address of Welcome*—His Excellency Clement C. Young, Governor of the State of California.
3. *President's Annual Address — Narcotics* — Percy T. Phillips, M. D.
4. *Address of President-Elect*—William H. Kiger, M. D.
5. *Annual Report of Council*—Morton R. Gibbons, M. D.
6. *Report of Arrangements Committee*—Junius B. Harris, M. D.

SECOND GENERAL MEETING

Wednesday, May 2, 10 a. m.

1. *Sudden Cerebral Lesions*—S. A. K. Wilson, M. D., University of London, England.
2. *The Cost of a Medical Education*—Ray Lyman Wilbur, Stanford University, Palo Alto.
3. *Address*—R. H. Creel, M. D., Marine Hospital, San Francisco.

THIRD GENERAL MEETING

Thursday, May 3, 10 a. m.

1. *Adipose Tissue*—H. Gideon Wells, M. D., University of Chicago, Chicago, Illinois.
2. *Acute Duodenal Fistula*—Waltman Walters, M. D., Mayo Clinic, Rochester, Minnesota.

FOURTH GENERAL MEETING

Thursday, May 3, 8 p. m.

1. *What the Layman Wants to Know About Cancer*—H. Gideon Wells, M. D., Chicago.

SECTION MEETINGS

ANESTHESIOLOGY SECTION

MARY E. KAVANAGH, M. D.

MARY F. KAVANAGH, M. D.
Chairman
1020 Union Street
San Francisco

R. G. HENDERSON, M. D.
Secretary
Bank of Italy Building
Broadway and Pine Streets
Long Beach

FIRST MEETING

Room A, Auditorium
Tuesday, May 1
2:30 p. m.

1. Chairman's Address—*The Origin of the Word "Anesthesia"*—Mary F. Kavanagh, M. D.
2. *Anesthesia in Obstetrics*—Frank W. Lynch, M. D., University of California Hospital, San Francisco.

   Discussion by Caroline B. Palmer, M. D., and R. T. Hastreiter, M. D.

   The paper considers the merits and demerits of the anesthesias now usually given by inhalation to produce analgesia, such as ethylene, nitrous oxid, and oxygen, and also reviews the results that have been obtained with the Gwathmey method and modifications in the University of California obstetrical clinic.
3. *Ethylene Anesthesia*—W. W. Hutchinson, M. D., 914 Detwiler Building, 412 West Sixth Street, Los Angeles.

   Discussion by Mary E. Botsford, M. D., and Edgar I. Leavitt, M. D.

   Ethylene: its advantages and disadvantages; observations from use in over two hundred patients where ethylene has been personally used in the Hollywood Hospital in the last six months of 1927. Precautions and lack of precautions in hospitals. Results: good and bad; postoperative complications in any way attributable to ethylene. Summary and conclusions.
4. *Nitrous Oxid in Oral Surgery*—Mary E. Botsford, M. D., 807 Francisco Street, San Francisco.

   Discussion by Neil C. Trew, M. D.

   Growing recognition of importance of focal infections in production of general pathological conditions, causing increased number of tonsillectomies and dental extractions. Frequent necessity of these operations being done in presence of pulmonary and renal conditions contraindicating ether. Résumé of two hundred cases of nitrous oxid-oxygen anesthesias for oral surgical procedures.
5. *Training of Anesthetists in Great Britain*—Clare Malone, M. D., St. Luke's Hospital, San Francisco.

   In Great Britain the specialty of anesthesia solely in the hands of physicians. Legal side of the question. Women in the specialty. Methods of training in medical schools. Hospitals in Great Britain and arrangement of the anesthetic staffs therein.

SECOND MEETING

Room A, Auditorium
Thursday, May 3, 2:30 p. m.

1. *Transsacral Anesthesia and Its Relation to General Surgery*—E. J. Kilfoy, M. D., 709 Medical Office Building, 1136 West Sixth Street, Los Angeles.

   Transsacral anesthesia is not a difficult procedure, and it does away with many postoperative complications, such as pleurisy, pneumonia, and pulmonary emboli, and it is in this way a material aid in lowering the surgical mortality. Failure to produce anesthesia lies in the hands of the anesthetist. If used and used successfully the patient is a "booster"; if unsuccessful the patient is a "knocker," so the operator must make sure in his own mind that the area is completely anesthetized.
2. *Spinal Anesthesia with Special Reference to the Use of Ephedrin*—Hall G. Holder, M. D., 1301 Medico-Dental Building, 233 A Street, San Diego.

   One hundred fifty-one cases of spinal anesthesia are reported with no morbidity or mortality and only one failure. Subjective and objec-

tive symptoms and sensations during the anesthetic occurred in about 3 per cent of cases. There was no postanesthetic sequelae other than headache, which occurred in only one, lasting more than twenty-four hours. Approximately one-half of the series received ephedrin. In those cases given 100 mg. or over of novocain without ephedrin, there was an average blood pressure drop of 37.5 mm., while those receiving it had an average drop of 12.8 mm. The sustained epinephrin-like action of ephedrin is definitely shown and its value in stabilizing blood pressure in spinal anesthesia clearly indicated.

3. *The Heart in Reference to Anesthesia*—R. W. Langley, M. D., 312 Professional Building, 1052 West Sixth Street, Los Angeles.

Discussion by Robert Burrows, M. D., and Neil C. Trew, M. D.

Proper evaluation of the risk to be taken is the most important factor in the management of cardiac cases in anesthesia. The type of anesthesia to be chosen will depend upon a thorough study of the cardiovascular condition. The skill of the anesthetist and his management is more important than the type of anesthesia.

4. *Anesthesia for Head Operations*—L. A. Rethwilm, M. D., 2217 Webster Street, San Francisco.

Discussion by Dorothy Wood, M. D., and Harry T. Cook, M. D.

1. Eye, nose, and throat operations: (*a*) usual procedure: (*b*) special cases under N_2O-O. 2. Eye operations: (*a*) under ether anesthesia; (*b*) under N_2O-O anesthesia—reasons for using and method of administering. 3. Other surgical head cases: particular technique during cautery excision of carcinoma of tongue, palate, etc.

5. *Anesthesia at the San Francisco Unit Shriners' Hospital for Crippled Children* — Emma Buckley, M. D., 2111 Hyde Street, San Francisco.

Nitrous oxid-oxygen throughout for delicate or weakened children or short operation. Ether or ether-oxygen the usual anesthetic. Preoperative preparation by isolation, external locals and atropin by mouth under 5 years; morphin and atropin hypodermically for older children. In closed cases where manipulation and change of position frequent, ether most efficient. Measures during operation and postoperative care taken to prevent postoperative complications.

DERMATOLOGY AND SYPHILOLOGY

KENDAL P. FROST, M. D.

KENDAL P. FROST, M. D.
Chairman
1023 Pacific Mutual Building
523 West Sixth Street
Los Angeles

*IRWIN C. SUTTON, M. D.
Secretary

FIRST MEETING
Room A
Auditorium
Monday, April 30
2:30 p. m.

1. *Skin Diseases and Their Importance to the General Practitioner—Considered from the Viewpoint of the Dermatologist*—C. Ray Lounsberry, M. D., 1111 Medico-Dental Building, 233 A Street, San Diego.

Discussion opened by Charles E. Schoff, M. D., Sacramento.

A consideration of diseases of the skin. Their relation to general pathological condition. Anaphylaxis. Importance of painstaking diagnosis. Treatment considered from internal as well as external points of view. Illustrated by case report.

2. *Erosio Interdigitalis Blastomycetica*—G. F. Koetter, M. D., 812 Medical Office Building, 1136 West Sixth Street, Los Angeles.

Discussion opened by Norman Epstein, M. D., San Francisco.

Erosio interdigitalis blastomycetica is of saccharomycetic origin. Commonly seen in women who wash clothing. Soap suds an important factor in the continuance of the infection. Absence of vesication, chronicity, fixed location, and the occurrence of the disorder on the hands of washerwomen, make the dermatosis worthy of consideration as an entity.

3. *Gold and Sodium Thiosulphate in the Treatment of Lupus Erythematosus*—Hiram E. Miller, M. D., 803 Fitzhugh Building, 384 Post Street, San Francisco.

Discussion opened by Samuel Ayres, M. D., Los Angeles.

A brief review of the use of gold compounds in the treatment of tuberculosis and other allied conditions. Personal experience in the treatment of fifty or more patients with lupus erythematosus, erythema induratum, and a few with diseases of obscure etiology such as lichen planus, urticaria, pigmentosa, psoriasis, etc. Contraindications to the use of the drug, reactions, recurrences, etc., will be discussed.

4. *The Radio Knife in Dermatologic Surgery*—H. J. Templeton, M. D., 3115 Webster Street, Oakland.

Discussion opened by Harry Alderson, M. D., San Francisco.

Review of the literature. Consideration of the physics of the current used. Experiments. Method of using knife. Practical points. Advantages and disadvantages. Review of cases treated by this method, including epitheliomas of the skin, lip and tongue, extra mammary, Paget's disease, melanomas, Naevi, carbuncles, fibromyxoma, and removing tissue for biopsies.

5. *Observations on the Value of X-Ray Therapy in Dermatology*—L. F. X. Wilhelm, M. D., 410 California Medical Building, 1401 South Hope Street, Los Angeles.

Discussion opened by H. J. Templeton, M. D., Oakland.

A brief sketch of the evolution of modern x-ray therapy in dermatology; pathologic changes produced in the skin; factors and tests determining skin tolerance; necessity of keeping well within the limits of skin tolerance. Cases showing evils of exceeding limits of skin tolerance. Limitations of and contraindications to its use.

6. *Improvement in Appearance of Scars, Hypertrophied Scars, and Keloids by Physiotherapy, X-Rays, Ultra-Violet Rays from Quartz Lamp, Radium Emanations, Applications of Carbon Dioxid Snow, and Acids*—H. C. L. Lindsey, M. D., Pasadena.

Discussion opened by George Koetter, M. D., Los Angeles.

Acne of various types, lupus vulgaris, lupus erythematosus, healed surgical wounds, x-ray burns, thermal burns, tuberculous involuted ulcers and repaired syphilitic lesions, sometimes render people less efficient and less beautiful in personal appearance by unsightly cicatrices, and much can be corrected and rendered less

* Deceased.

conspicuous by artistic use of armamentaria mentioned.

SECOND MEETING

Church, Fifteenth and J Streets

Wednesday, May 2, 2:30 p. m.

1. *Early Writings on Syphilis*—Merrill W. Hollingsworth, M. D., 409 First National Bank Building, Santa Ana.

   Discussion opened by George Dock, M. D., Pasadena.

   From original Latin volumes in the University of Vienna. Was "lepra" of the Middle Ages leprosy or syphilis? Correlation of the varied picture during the 1494-96 epidemic of syphilis, with observations in Soviet Russia. Jean Astruc's reasons for denying the possibility of syphilis being caused by a micro-organism.

2. *Four Years' Observation with Malaria Therapy in Patients with Neurosyphilis*—Paul A. O'Leary, M. D., Mayo Clinic, Rochester, Minnesota.

   The results in the first one hundred patients with neurosyphilis treated by malaria therapy and observed for four years; the type and degree of clinical and serological improvement; types of neurosyphilis best suited for the method; analyses of the failures including the deaths; a comparative evaluation of the various methods of treating neurosyphilis; illustrative case reports.

3. *The Non-Specific Diagnosis of Congenital Lues*—Stuart C. Way, M. D., 320 Medico-Dental Building, 490 Post Street, San Francisco.

   Discussion opened by Harry Coe, M. D., Oakland.

   The minor diagnostic signs in congenital syphilis, with special reference to anatomical dystrophies and other pathological abnormalities, the importance of which is frequently confirmed by the Wassermann or other serological tests.

4. *A Syphilologist's Ideal Clinic*—Ernest K. Stratton, M. D., 414 Medico-Dental Building, 490 Post Street, San Francisco.

   Discussion opened by H. J. Templeton, M. D., Oakland.

   Social service activities. History and treatment charts. Arrangement of the examination and treatment rooms. A properly equipped laboratory adjoining. Cooperation to and from other departments.

5. *Actinomycosis*—Norman N. Epstein, M. D., 803 Fitzhugh Building, 384 Post Street, San Francisco.

   Discussion opened by George Culver, M. D., San Francisco.

   Example of actinomycosis in a young male adult. On incision pus containing "sulphur granules" exuded from the abscesses. Organisms identified microscopically. Were cultured. Condition has apparently been cured by use of sodium iodid intravenously, and by non-specific protein therapy.

6. *Further Observation on the Treatment of Coccidioides*—H. P. Jacobsen, 1016 South Alvarado Street, Los Angeles.

   Discussion opened by Hiram E. Miller, M. D., San Francisco.

   Two additional cases of coccidioides treated with colloidal copper apparently successfully. The elapse of one year since the report of the first two cases of the disease treated with colloidal copper successfully has produced sufficiently encouraging results to justify its further employment.

EYE, EAR, NOSE, AND THROAT SECTION

SIMON JESBERG, M. D.

SIMON JESBERG, M. D.

Chairman

500 S. Lucas Avenue

Los Angeles

RODERIC O'CONNOR, M. D.

Secretary

910 Medical Building

1904 Franklin Street

Oakland

FIRST MEETING

Room B, Auditorium

Wednesday, May 2

2:30 p. m.

1. Chairman's Address—Simon Jesberg, M. D.

2. *Prolonged Monocular Occlusion in Diagnosis of Heterophoria*—Edward M. Talbott, M. D., Oakland Bank Building, Oakland.

   Discussion opened by R. J. Nutting, M. D.

   As a cycloplegic is used in diagnosing a metropia; so prolonged monocular occlusion should be used in selected cases to determine the existence of muscle imbalance. It should be continuously maintained until two successive tests give similar results; usually a week. Treatment: based upon this test often relieves persistent asthenopia.

3. *Sight-Saving Classes in California*—Frank H. Rodin, M. D., 505 Medico-Dental Building, 490 Post Street, San Francisco.

   Discussion opened by Anita M. Muhl, M. D.

   The paper deals with the conservation of vision of myopic children and the education of those children whose sight does not permit them to study in the regular grades. It also covers a survey of what is being done by the various Boards of Education in the cities and counties of California, where sight-saving classes have been established and the type of children educated there.

4. *A Typical Lateral Sinus Disease*—A. S. J. Smith, M. D., 410 Twohy Building, San Jose.

   Discussion opened by Dorothea Lee, M. D.

   Case No. 1, septic clot extending from torcular herophili to bulb of jugular without mastoid sepsis following extensive hemorrhage from ear. Case No. 2, wherein symptoms simulated lateral sinus thrombosis, sinus exposed and found healthy. Recovery without operation. Case No. 3, venous hemorrhage from mastoid cells, small opening in sinus wall without apparent perisinus abscess.

5. *Reconstruction of the Auricle*—George W. Pierce, M. D., 720 Medico-Dental Building, 490 Post Street, San Francisco.

   Discussion opened by H. B. Graham, M. D.

   Most reconstructed ears have a marked tendency to contract. The new operation demonstrated in this paper provides an auricle which does not shrink. The paper is illustrated with moving pictures, and shows three examples of reconstruction. 1. Complete loss of ear from

trauma. 2. Loss of half the auricle from trauma. 3. Congenital absence of the auricle.

6. *Unilateral Exophthalmos in Toxic Goiter*—Samuel A. Durr, M. D., 1304 Medico-Dental Building, 233 A Street, San Diego.

Discussion opened by Frank W. Miller, M. D.

Standard textbooks of ophthalmology do not mention Graves' disease as an etiological agent in unilateral exophthalmos. A short discussion of the causes of exophthalmos is given. Two case histories are detailed of patients showing unilateral exophthalmos, with a co-existing Graves' disease. In neither of these did there seem to be any other causative factor, and both improved very rapidly under iodids and bed rest.

SECOND MEETING

Room B, Auditorium

Thursday, May 3, 2:30 p. m.

1. *The Untoward Effects of Protein Therapy in Ophthalmic Practice*—M. N. Beigelman, M. D., 1244 Roosevelt Building, 727 West Seventh Street, Los Angeles.

Discussion opened by Otto Barkan, M. D.

Various forms of anaphylaxis in protein therapy—from slight vascular disturbances to death. Frequency and preventive methods; focal reactions in the treatment of corneal and uveal lesions; untoward effects in keratomalacia and corneal herpes; possibility of an increase in tension in secondary glaucoma, illustrated by case histories.

2. *Allergic Rhinitis*—H. P. Merrill, M. D., 702 Title Insurance Building, Los Angeles.

Discussion opened by George Piness, M. D.

Allergic rhinitis not a disease entity, but a local manifestation of general hypersensitiveness. The local signs, gross and microscopic pathology have been known for years. Failure to recognize their allergic origin still leads to treatment of these cases as infections, neuroses and nasal reflexes. Rhinologists must become familiar with the methods of diagnosis and treatment of allergic conditions if these cases are to be handled properly.

3. *Chronic Purulent Otitis Media*—Frank E. Detling, M. D., 907 Chapman Building, Los Angeles.

Discussion opened by F. M. Shook, M. D.

Neglected subject, not having been presented on annual program since 1909. Most vital to patient; frequent complications and grave possibilities make it the largest and most important chapter in otology. Prophylaxis—full economic and medical problem of condition not fully appreciated. Frequency at Los Angeles General Hospital in contagious department. Diagnosis. Treatment. (*a*) Medical (50 to 75 per cent curable). (*b*) Surgical: indications and contraindications.

4. *The X-Ray as an Aid in the Injection of the Sphenopalatine Ganglion*—O. H. Homme, M. D., 918 Pacific Mutual Building, 523 West Sixth Street, Los Angeles.

Discussion opened by Isaac H. Jones, M. D.

The sphenopalatine foramen and the pterygopalatine canal can be seen by x-ray. When needles are inserted their relation to the ganglion region and surrounding structures can be determined. Thus dangers of the injection are lessened, and more successful results can be expected.

GENERAL SURGERY SECTION

CHARLES E. PHILLIPS, M. D.

CHAS. E. PHILLIPS, M. D.
Chairman
706 Pacific Mutual Building
523 West Sixth Street
Los Angeles

EDMUND BUTLER, M. D.
Secretary Northern Section
615 Medico-Dental Building
490 Post Street
San Francisco

BURNS S. CHAFFEE, M. D.
Secretary Southern Section
917 Security Building
Long Beach

FIRST MEETING

Memorial Hall, Auditorium

Monday, April 30, 2:30 p. m.

1. Chairman's Address—*Statistical Studies and Medical Efficiency.*

2. *The Commoner Surgical Lesions of the Rectum and Anus—Treatment*—M. S. Woolf, M. D., Fitzhugh Building, 384 Post Street, San Francisco.

Discussion opened by Dudley Smith, M. D., and William H. Kiger, M. D.

Anatomy of the anal canal with especial reference to the sphincter and levator ani muscles. Hemorrhoids. The value and method of treatment by injections. Results. Fissure in ano. Why treatment may fail. Fistula and abscess. External opening not always necessary for treatment of the latter. Treatment depends on anatomy. Multiple fistulae.

3. *Acute Pancreatitis*—W. H. Olds, M. D., Consolidated Building, 607 South Hill Street, Los Angeles.

Discussion opened by Frederick Leet Reichert, M. D., and Frank B. Reardon, M. D.

A report of seven cases of acute pancreatitis. Essential operative findings and postoperative complications brought out. Especial emphasis on proper drainage and postoperative care. Some conclusions reached after reviewing these cases.

4. *Reconstruction of Long Bones*—Harlan Shoemaker, M. D., Bank of Italy Building, 649 South Olive Street, Los Angeles.

Discussion opened by Thomas J. Nolan, M. D., and Donald Cass, M. D.

Immediate reconstruction following fracture. Reconstruction of old fractures: (*a*) Overcoming shortening. (*b*) Overcoming angulation. (*c*) Overcoming muscle and tendon contractures. (*d*) Avoidance of shock.

Methods. Internal fixation: (*a*) Foreign bodies. (*b*) Grafts. (*c*) Plastic work. External fixation: (*a*) Casts. (*b*) Braces. (*c*) Combination of braces and casts and traction.

5. *Fractures of the Elbow Region, Prognosis and Treatment*—H. D. Barnard, M. D., 2417 South Hope Street, Los Angeles.

Discussion opened by Thomas R. Haig, M. D., and J. Judson Sale, M. D.

First section takes up the epiphyseal development of elbow from a diagnostic and surgical standpoint. The more common types of fracture are exhibited showing the approximate functional end-result to be expected in each type. X-rays and function demonstrated in each case. Last section shows author's method of treatment. (Moving-picture film.)

6. *The Control of Intractable Pain*—E. B. Towne, M. D., 612 Union Square Building, 350 Post Street, San Francisco.

Discussion opened by Walter Coffey, M. D., and Howard Fleming, M. D.

The pain of inoperable malignant disease may be abolished by certain neurosurgical procedures: (1) alcohol injection or division of the sensory root of the trigeminal nerve, (2) division of the glossopharyngeal nerve in the posterior fossa of the skull, and (3) division of the anterolateral columns of the spinal cord in the upper dorsal region. (Lantern slides.)

Second Meeting

Memorial Hall, Auditorium

Wednesday, May 2, 2:30 p. m.

1. *"By Their Fruits Ye Shall Know Them"*—T. W. Huntington, M. D., 220 Montgomery Street, San Francisco.

No discussion.

2. *Inguinal Hernia Containing Fallopian Tube*—Alanson Weeks, M. D., and G. D. Delprat, M. D., Fitzhugh Building, 384 Post Street, San Francisco.

Discussion opened by Clinton Collins, M. D., and Eugene Falk, M. D.

Case of pelvic inflammatory disease in which there was a swelling below Poupart's ligament. This was thought first to be either a bubo or extension of the inflammation along the broad ligament and out through the inguinal opening; it was found to be a right tube which was contained in the inguinal canal.

3. *Duodenitis*—Gunther W. Nagel, M. D., Rochester, Minnesota. (By invitation.)

Discussion opened by John Homer Woolsey, M. D., and Charles T. Sturgeon, M. D.

Duodenitis is a surgical and pathological entity characterized by circumscribed or diffuse inflammation of the first portion of the duodenum. Secondary inflammatory changes in the tissues surrounding duodenal ulcer are well known. Inflammation as a primary lesion and its place in the ulcer problem are discussed.

4. *Bronchiectasis*—Harold Brunn, M. D., and William B. Faulkner, M. D., Fitzhugh Building, 384 Post Street, San Francisco.

Discussion opened by Loren Roscoe Chandler, M. D., and Hans Schiffbauer, M. D.

The mechanical principles involved in the production of the bronchiectasis. The etiological factors including influenza and war gases. The insidious onset and the difficulty of diagnosis of early cases by physical signs alone. Lipiodol, bronchoscopy, and pneumothorax are very useful in the diagnosis of cases while still amenable to treatment.

5. *The Importance of Alkalosis in Certain Preoperative Lesions and Postoperative Lesions of the Upper Gastro-Intestinal Tract*—E. Eric Larson, M. D., Woodland Clinic, Woodland; and D. Schuyler Pulford, M. D., Woodland Clinic, Woodland.

Discussion opened by H. G. Wells, M. D., and Leo Pecci Bell, M. D.

It is necessary to recognize the presence of alkalosis, the opposite of acidosis, in lesions of the upper gastro-intestinal tract. Attention is called to three different types of conditions with the clinical and blood chemical findings. The manner of treatment, preoperatively and postoperatively, as well as the results obtained, is shown.

6. *The Circulatory Phenomena Attending an Arteriovenous Aneurysm and Their Importance in Relation to Surgical Therapy*—Emile Holman, M. D., Stanford Hospital, 2398 Sacramento Street, San Francisco.

Discussion opened by William Dock, M. D., and C. D. Lockwood, M. D.

Cardiac decompensation is the inevitable result of any large arteriovenous communication if allowed to remain for sufficient length of time. Hence, it is important to treat the lesion by surgical methods, preferably by excision and quadruple ligation. Ligation of the artery proximal to a fistula in an extremity is contraindicated because of danger of gangrene beyond the fistula.

Third Meeting

Memorial Hall, Auditorium

Thursday, May 3, 2:30 p. m.

1. *Adenomatous Goiter*—F. B. Settle, M. D., 610 Security Building, First and Pine Avenue, Long Beach.

Discussion opened by J. L. Maupin, M. D., and Joseph F. Walsh, M. D.

1. The first anomaly of the thyroid gland to be treated surgically. 2. The relative incidence as compared to other surgical lesions—age, sex. 3. The prolonged pretoxic and other preclinical periods—Tendency to regard so-called "innocent goiter" lightly—Its relation to sexual phenomena in women—puberty—childbearing—menopause.

2. *The Distribution of Endemic Goiter in California*—Henry Hunt Searls, M. D., University of California Hospital, Fourth and Parnassus Avenues, San Francisco.

Discussion opened by Wallace I. Terry, M. D., and Clarence Toland, M. D.

From the residence history in case records of the endemic types of goiter, the locality in which the goiter developed was definitely established in 450 cases. A map of California on which these localities are plotted shows certain regions where the incidence of endemic goiter is quite high.

3. *The Importance of Differential Diagnosis in Toxic Goiter*—A. B. Cooke, M. D., Roosevelt Building, 727 West Seventh Street, Los Angeles.

Discussion opened by Philip Gilman, M. D., and J. H. Shephard, M. D.

Is there essential difference between the hyperthyroidism of exophthalmic goiter and that of toxic adenoma? Is iodin (Lugol's solution) beneficial in one type and harmful in the other? Affirmative answer to these two questions establishes the importance of differential diagnosis. Discussion of the means available for reaching correct conclusions in diagnosis.

4. *Graft of Human Fetal Pancreas in Diabetes*—Leo Eloesser, M. D., Medico-Dental Building, 490 Post Street, San Francisco.

Discussion opened by Eugene Kilgore, M. D., and Howard West, M. D.

A graft of fetal pancreas tissue was successful in reducing the amount of fetal insulin in a young diabetic by 50 per cent.

5. *Traumatic Shock—Its Newer Aspects and Treatment*—George K. Rhodes, M. D., 315 Fitzhugh Building, 384 Post Street, and Carol McKenney, M. D., 1243 Flood Building, 870 Market Street, San Francisco.

Discussion opened by Ernest Falconer, M. D., and James O'Connor, M. D.

This paper will endeavor to review the clinical aspects of traumatic shock and discuss the modern conception of the problems involved. The more generally accepted theories will be reviewed and a rational treatment outlined which will be submitted as based on acceptable experimental data.

GENERAL MEDICINE SECTION

JAMES F. CHURCHILL, M. D.

J. F. Churchill, M. D.
Chairman

1310 Medico-Dental Building,
233 A Street
San Diego

Q. O. Gilbert, M. D.
Secretary

301 Medical Building
1904 Franklin Street
Oakland

First Meeting

Little Theater
Auditorium
Monday, April 30
2:30 p. m.

1. *A Special Autogenous Vaccine*—Oscar F. Johnson, M. D., 510 Physicians Building, 1027 Tenth Street, Sacramento.

   Autogenous vaccine prepared by method of Solis-Cohen. Used in chronic cases seen in general practice. Patient's bacteria cultured in about 6 cc. of his own blood. Natural antiseptic properties of blood destroy organisms to which he has an immunity. Vaccine made from surviving organisms; method of distinct value.

2. *The Treatment of Polycythemia Vera with Phenylhydrazine*—Samuel H. Hurwitz, M. D., 1214 Medico-Dental Building, 490 Post Street, San Francisco, and Joseph Levitin, M. D., 3856 California Street, San Francisco.

   Clinical symptoms of polycythemia vera (Osler's disease; Vaquez's disease) mainly due to increased bulk of red cells resulting from excessive erythroblastic activity of the bone marrow. Treatment therefore concerned with relief of symptoms by reducing total blood mass: venesection, roentgen rays, radium, and benzol, all employed with some modicum of success. Case reported.

3. *A Fatal Case of Rattlesnake Bite, with a Review of Nineteen Similar Cases and Remarks on Specific Therapy*—J. F. Doughty, M. D., 231 West Eleventh Street, Tracy.

   Only nineteen fatal cases of rattlesnake bite recorded. The case presented is of three-year-old boy, bitten three times. Tabulation of all reported fatal cases given with discussion of the mechanism of the bite, physiological action of the venom, and non-specific and specific treatment. Illustrated with six lantern slides, from pictures by Ralph Sweet.

4. *The Radicular Syndrome—Its Relation to Arthritis of the Spine*—Lewis Gunther, M. D., University of California Hospital, Fourth and Parnassus Avenues, San Francisco.

   Work done by the French school; literature briefly considered. Short discussion of lack of accurate objective observations in so-called neuralgias associated with arthritic changes in the spine. Results of studies of series of case observations made on Medical Service, University of California Hospital, and dispensary on patients whose complaints were of root nature. Relationship of such complaints with their concomitant sensory changes to osteoarthritis of the spine. Application of observations to so-called neuritic states and importance of this syndrome, which simulates closely a multitude of visceral diseases, considered in differential diagnosis.

5. *Critical Diagnosis and Treatment of Diseases in Which Human Intestinal Protozoa are a Factor*—John V. Barrow, M. D., 701 Westlake Professional Building, Los Angeles.

   1. Essentials in laboratory diagnosis giving both quantitative and qualitative knowledge of the organisms. 2. Estimating the virulence, protein load, eliminative possibilities, and host resistance. 3. Chronic diseases from general causes in which protozoa are undoubtedly a factor. 4. So-called carrier cases in which treatment may be questionable. 5. Heavily infested cases fulfilling all typical requirements specifically outlined. 6. Drugs, methods and manner of treatment specifically outlined.

Second Meeting

Little Theater, Auditorium

Tuesday, May 1, 2:30 p. m.

1. *A Simple Management of Achlorhydria Gastrica*—W. D. Sansum, M. D., and P. A. Gray, M. D., Santa Barbara Cottage Hospital, Santa Barbara.

   Subnormal amount of hydrochloric acid in the stomach a common cause of abdominal distress, sometimes associated with alternating attacks of constipation and diarrhea. Condition usually inadequately treated by use of dilute hydrochloric acid, because only limited amounts of mineral acid can be given. During the past three years grapefruit, grapefruit juice, and lemonade have been used with excellent results.

2. *Use of Liver Extract in Pernicious Anemia*—H. A. Wyckoff, M. D., Stanford University Hospital, Clay and Webster Streets, San Francisco.

   A fraction of liver, prepared by the method of Cohn and Minot, has been available through the courtesy of the Harvard Pernicious Anemia Committee. Report of four undoubted cases of pernicious anemia treated with this substance. Typical response obtained in all cases including rise in reticulocytes and prompt rise in blood count and hemoglobin to approximately normal levels. Discussion of the dosage, indications and character of blood change produced by this treatment.

3. *Abdominal Food Allergy*—Albert H. Rowe, M. D., 242 Moss Avenue, Oakland.

   Food allergy is frequent cause of abdominal pain and indigestion and has not received sufficient recognition. Patients presenting these symptoms who give positive family or personal history of allergy or who have obvious disagreements or distastes for certain foods should be investigated from point of view of food sensitization. A plan for diagnosis by history, skin tests, and by the use of "elimination diets" will be outlined and the best methods of therapy and control in the writer's experience will be discussed.

4. *The Relation of Inorganic Salts to Life Processes*—Professor Carl L. A. Schmidt, Division of Biochemistry and Pharmacology, University of California, Berkeley.

   Paper will concern itself with need of animal organism for various inorganic elements which are present in most mixed diets. How the body exhibits its need for these various elements when they are withheld. Relation of such elements as calcium, phosphorus, iodin and iron to pathological conditions. How the inorganic elements are related to the acid-base balance. Brief résumé of experiments which were carried out on

an experimental squad. Summary of certain newer developments in this field of research.

5. *Pellagra*—Gordon E. Hein, M. D., University of California Hospital, Fourth and Parnassus Avenues, San Francisco.

Discussion opened by R. L. Bramhall, M. D.

Clinical picture of symmetrical dermatitis, sore mouth and diarrhea, with changes in central nervous system known as pellagra. Not uncommon in San Francisco; and recent increase in cases observed. Deficient diet a common finding. Excessive alcohol apparently a predisposing factor in large per cent. No difference clinically between syndrome in patients with history of excessive alcohol and those without. Operations on gastro-intestinal tract (gastroenterostomy) seemed to bear occasionally some relation to disease in a few. Some patients with complete recovery; others with recurrences. Mortality in well-advanced cases high.

THIRD MEETING

Little Theater, Auditorium
Thursday, May 3, 2:30 p. m.

1. Chairman's Address.

2. *Social and Economic Aspect of Heart Disease*—George E. Ebright, M. D., 719 Fitzhugh Building, 384 Post Street, San Francisco.

Recognition of heart disease as social problem; segregation of preventable and unavoidable types; knowledge increasing regarding cause of former; rheumatism; syphilis; occupational activities. Economic loss—comparison with tuberculosis; with typhoid; cost of hospitalization. Cardiac cripples—classification; education; vocational training. Cooperation of social and governmental agencies and professions; functions of each. Conclusions.

3. *The Pathogenesis of Rheumatic Heart Disease*—Walter P. Bliss, M. D., 407 Professional Building, 65 North Madison Avenue, Pasadena.

Consideration of incidence and lesions produced by rheumatic fever with especial reference to myocarditis and endocarditis; early and remote effects of disease; association of tonsillar and other foci of infection; relationship of chorea to rheumatic fever; complications with especial reference to pericarditis.

4. *The Treatment of Rheumatic Heart Disease in Children*—William W. Belford, M. D., 3235 Fourth Street, San Diego.

Need of complete and prolonged rest in bed most imperative and to be begun as quickly as possible. Foci of infection should be removed, but with care and after careful observation. Importance of nutrition of such children must not be forgotten.

5. *Adhesive Pericarditis*—John J. Sampson, M. D., University of California Hospital, Fourth and Parnassus Avenues, San Francisco.

Adhesive pericarditis clinical entity; unusual load of work put on heart. Diagnosis dependent on suggestive history of severe cardiac infection with or without pericardial pain; cardiac hypertrophy disproportionate to mechanical defect of damaged valves; practical physical signs; fixation of the mediastinal contents in shifting posture, demonstrated strikingly by x-ray and electrocardiogram. Technique of electrocardiogram briefly given. Sharp delineation of otherwise doubtful cases: case histories. Infection to pericardium from pulmonary and pleural lesions such as bronchiectasis, lung abscess, and empyema. Possible relief of condition by surgical plastic procedures.

INDUSTRIAL MEDICINE AND SURGERY SECTION

W. C. ADAMS, M. D.

W. C. ADAMS, M. D.
Chairman
802 Medical Building
1904 Franklin Street
Oakland

C. O. SAPPINGTON, M. D.
Secretary
602 Hutchinson Building
1706 Broadway
Oakland

FIRST MEETING

Room B
Auditorium
Monday, April 30
2:30 p. m.

1. *Carbon Monoxid Poisoning*—Robert T. Legge, M. D., 6 Roble Road, Berkeley.

Discussion opened by M. R. Gibbons, M. D.

An industrial and domestic invisible hazard. The significance of small amounts inhaled by artificers. Toll in industry and in homes. Newer methods of detection and research. Its physiology, pathology, symptomatology, and treatment.

2. *External Bone Plating for Long Bones*—C. A. Dukes, M. D., 601 Wakefield Building, 426 Seventeenth Street, Oakland.

Discussion opened by W. C. Adams, M. D.

Description of technique by H. R. Allen in 1914. Description of plate used by author. Lantern slides of types used since the paper of Lambotte in 1900. Use of plate in both compound and other fractures. New method of introduction of bolts into bone without long incision. Review of cases in which plate has been used. Author's impressions relative to use of external bone plating.

3. *The Relationship of Industrial Diseases to Public Health*—W. C. Hassler, M. D., 1085 Mission Street, San Francisco.

Discussion opened by J. L. Pomeroy, M. D.

Relation of industrial diseases to health and community problems; education of workers; cooperation of lodges, unions, insurance societies, in clinics, and demonstrations. Health cards to workmen after periodic examinations; physical surveys of workers with establishment of health standards; mortality and morbidity reports; uniform statistics. Cooperation with health authorities, welfare and social agencies; promotion of proper legislation; training of industrial physicians; periodic conference.

4. *Industrial Corneal Injuries*—Raymond F. Nutting, M. D., Medical Building, 1904 Franklin Street, Oakland.

Report of different types of corneal injuries seen in 1400 consecutive cases. Importance of proper diagnosis and treatment in these cases in regard to disability both from the standpoint of the employee and employer.

5. *Medical Problems of an Industrial Medical Director*—R. A. Jewett, M. D., 2525 East Thirty-seventh Street, Los Angeles.

Similarity of ideals of medicine and industry; working methods and results somewhat different; business administration foreign to physi-

cian; medical ethics foreign to business men; successful medical director understands both. Necessity of rendering service in the light of business administration and the securing of co-operation of employer and employee. Three main divisions of industrial medical service: (*a*) Care of the injured; (*b*) Safety, sanitation and hygiene; (*c*) Care of the sick.

SECOND MEETING

Auditorium, Memorial Hall

Tuesday, May 1, 2:30 p. m.

1. Election of Officers.

2. *Isolated Tuberculosis of the Carpus—Diagnosis and Treatment*—Merrill C. Mensor, M. D., 1214 Medico-Dental Building, 490 Post Street, San Francisco.

   Discussion by Leonard Ely, M. D., and Emile Holman, M. D.

   Presentation of the second reported case in medical literature of isolated tuberculosis of the carpal navicular with a new and conservative method of operative treatment and its subsequent course. The similarity between inflammatory and traumatic lesions in the carpus and the difficulty of differential diagnosis.

3. *The Trend in Industrial Dentistry, Including Some Observations in Europe*—Guy Millberry, D. D. S., San Francisco.

   Many industrial plants have introduced dental service into their general health service. One hundred per cent of all workers need dental service. How far shall this be projected into the industrial field? The general tendency in America is to limit it to emergency service examinations and prophylaxis. In Europe it is more widely inclusive, especially in Great Britain and Germany.

4. *Traumatic Pneumonia*—Stewart V. Irwin, M. D., Dalziel Building, 532 Fifteenth Street, Oakland.

   Discussion opened by Ernest Falconer, M. D.

   Definition, diagnosis, clinical types, animal experiments, pulmonary tissue changes comparable to "traumatic pneumonia," lesions in humans demonstrated. Factors concerned in production of localized infectious process—hemorrhagic infiltration; its relationship to development of typical microbic pneumonia—course and prognosis. Injury and compensation for accidents.

5. *Organization Needs of Western Industrial Hygiene*—W. P. Shepard, M. D., 600 Stockton Street, San Francisco.

   Discussion opened by C. O. Sappington, M. D.

   Diversity and uniqueness of industrial hygiene problems; illustrations from actual observations in the West. Similarity of industrial hygiene problems; need for interchange of ideas; constant menace of lack of funds; gap which exists between industrial hygiene departments and community health agencies. Advantage from an organization of industrial physicians; clearing house; standardization; pooling of results for mutual support. Suggestions for organization.

6. *Industrial Psychiatry*—Jau Don Ball, M. D., 301 Flood Building, 870 Market Street, San Francisco.

   Discussion opened by R. L. Richards, M. D.

   1. The value of psychiatry, of specialists in human behavior to industrial and labor organizations. 2. Present-day attitude of employers and employees. 3. Methods of organizing in industry for industrial psychiatry. 4. Examples for widely divergent California industries that have attempted to use industrial psychiatry. 5. Outlook for the future of industrial psychiatry.

NEUROPSYCHIATRY SECTION

V. H. PODSTATA, M. D.

V. H. PODSTATA, M. D.
Chairman

404 Union Square Building
350 Post Street
San Francisco

SAMUEL D. INGHAM, M. D.
Secretary

1252 Roosevelt Building
727 West Seventh Street
Los Angeles

FIRST MEETING

Room A, Auditorium

Wednesday, May 2, 2:30 p. m.

1. Chairman's Address—*Mental Hygiene in Children*—V. H. Podstata, M. D.

2. *Non-Specific Protein Therapy in Mental and Nervous Diseases*—H. Douglas Eaton, M. D., 811 Medical Office Building, 1136 West Sixth Street, Los Angeles.

   A brief survey of the history and theory of non-specific protein therapy in medicine and neurology. The author's experience with non-specific therapy produced by the intravenous administration of typhoid vaccine in a series of approximately thirty cases during the last two years.

3. *Psychiatry in Action*—Robert L. Richards, M. D., 409 Fitzhugh Building, 384 Post Street, San Francisco.

   Discussion opened by Joseph Catton, M. D., San Francisco.

   Covering some practical work in speed, accuracy, and results as compared with other medical work.

4. *Constitutional Psychopathy: A Condition, Social and Medico-Legal, not a Disease*—Thomas J. Orbison, M. D., 503 Westlake Professional Building, 2007 Wilshire Boulevard, Los Angeles.

   Discussion opened by Joseph Catton, M. D., San Francisco.

   1. Its dominant characteristics are (*a*) hereditary taint; (*b*) hyperirritability or hypoirritability of the emotional sphere; (*c*) imbalance of "will"; (*d*) imbalance of judgment; (*e*) perimetric irregularities in the intellectual sphere. 2. Types. 3. Frequency. 4. Psychiatric, social, and medico-legal problem necessarily associated with this condition.

SECOND MEETING

Church, Fifteenth and J Streets

Thursday, May 3, 2:30 p. m.

1. *Narcolepsy*—S. A. Kinnier Wilson, M. D., London, England.

2. *Intracerebral Hemorrhage After Injury*—Howard C. Naffziger, M. D., 417 Fitzhugh Building, 384 Post Street, San Francisco, and O. W. Jones, Jr., M. D., University of California Hospital, San Francisco.

   Three cases are presented illustrating single large intracerebral hemorrhages operated upon with recovery. Survey of the literature of "Spat

apoplexia." Comments on diagnosis and treatment.

3. *A New Method of Recording Tremor—With Some Account of Its Clinical Significance*—Henry G. Mehrtens, M. D., Lane Hospital, San Francisco, and Pearl S. Pouppirt, M. D., 2355 California Street, San Francisco.

Discussion opened by Walter Schaller, M. D., San Francisco.

The physiology of tremor. Older methods of recording. The new instrument with examples of its work. Showing the possibility of the analysis of tremors. The tremor of the normal individual. The possibility of grouping normal individuals on basis of their tremors. The parallel between tremor and personality. Demonstration of pathologic tremors. Effect of drugs on tremors.

4. *Mental Disturbances in Tumors of the Brain*—I. Leon Meyers, M. D., 517 Hillstreet Building, 817 South Hill Street, Los Angeles.

1. Mental changes resulting from general intracranial pressure. 2. Mental disturbances resulting from focal brain lesions. (*a*) Subtentorial lesions. (*b*) Frontal lobes. (*c*) Hypophysis. (*d*) Occipital lobe. (*e*) Temporal lobe.

OBSTETRICS AND GYNECOLOGY SECTION

JOHN A. SPERRY, M. D.

JOHN A. SPERRY, M. D.
Chairman
903 Medico-Dental Building
490 Post Street
San Francisco

KARL L. SCHAUPP, M. D.
Secretary
835 Medico-Dental Building
490 Post Street
San Francisco

FIRST MEETING
Church
Fifteenth and J Streets
Monday, April 30
2:30 p. m.

1. Chairman's Address—*Partial Resection of Polycystic Ovaries.*

2. *Spontaneous Hematoma of the Abdominal Wall*—Alice F. Maxwell, M. D., University of California Hospital, Fourth and Parnassus Avenues, San Francisco.

Discussion opened by Ludwig A. Emge, M. D., San Francisco.

Review of literature. Material studied from standpoint of etiology, clinical symptoms, differential diagnosis, treatment, and prognosis. Presentation of a case of non-traumatic rupture of the epigastric artery, occurring in a woman late in pregnancy. Treatment.

3. *Ethical, Legal, and Clinical Aspects of Tubal Ligation*—Ludwig A. Emge, M. D., 506 Union Square Building, 350 Post Street, San Francisco.

Discussion opened by Olga McNeile, M. D., Los Angeles.

Medico-legal, ethical, and clinical aspects of sterilization of women. The California law is considered in particular. Conscientious objections. Clinical indications, methods, and end-results. The clinical study is based on observations on material drawn from the Stanford women's clinic and the writer's private practice.

4. *Radiation Therapy in Uterine Fibromyomata*—W. E. Costolow, M. D., 1407 South Hope Street, Los Angeles.

Discussion opened by Clarence Toland, M. D., Los Angeles.

Experiences with radium and deep x-ray therapy in the treatment of over five hundred cases of uterine fibromyomata (1921 to 1926 inclusive). The location of the tumor is a more important factor in determining the type of treatment than the size of the growth or the age of the patient. In uncomplicated bleeding fibroids, radiation is the treatment of choice.

SECOND MEETING

Church, Fifteenth and J Streets

Tuesday, May 1, 2:30 p. m.

1. *Uterine Bleeding in the Absence of Gross Pelvic Pathology*—C. F. Fluhmann, M. D., Stanford University Hospital, 2398 Sacramento Street, San Francisco.

Discussion opened by Frank W. Lynch, M. D., San Francisco.

A study of seventy-one cases. Classification based on clinical manifestation of bleeding. Finding from examination of curettings. Relation between clinical manifestation of bleeding and the histopathological examination. Immediate and remote causes of bleeding. Outline of treatment.

2. *Sterility*—Olga McNeile, M. D., 610-12 Westlake Professional Building, 2007 Wilshire Boulevard, Los Angeles.

Discussion opened by Ludwig A. Emge, M. D., San Francisco.

Common cause of sterility. Unusual causes. Sterility in the male. Sterility following abortions, prevention of conception and following abdominal section. Treatment. Results of various forms of treatment. Dangers. Percentage of pregnancy in my series of cases.

3. *Dry Labor*—Margaret Schulze, M. D., University of California Hospital, Fourth and Parnassus Avenues.

Discussion opened by Henry A. Stephenson, M. D., San Francisco.

Analysis of six hundred cases in which membranes ruptured before labor or with the first pain. Causes of premature rupture. Influences upon length of labor, type of pains, operative incidence, maternal morbidity, fetal mortality. Analysis of causes of fetal death. Results of induction of labor.

4. *Krukenberg Tumor of the Ovary with Report of Two Cases*—Roy E. Fallas, M. D., 625 Merchants National Bank Building, 548 South Spring Street, Los Angeles.

Discussion opened by John A. Sperry, M. D., San Francisco.

Résumé of cases reported. Report of two additional cases. Discussion of etiology, pathology, and prognosis.

PATHOLOGY AND BACTERIOLOGY SECTION

ROY W. HAMMACK, M. D.

ROY W. HAMMACK, M. D.
Chairman
1003 Pacific Mutual Building
523 West Sixth Street
Los Angeles

W. T. CUMMINS, M. D.
Secretary
Southern Pacific Hospital
San Francisco

FIRST MEETING
Room C, Auditorium
Tuesday, May 1
2:30 p. m.

1. Chairman's Address.

2. *Mussel-Poisoning in California* — Karl F. Meyer, Ph.D., Hooper Foundation, University of California, San Francisco.

   Between July 14 and 19, 1927, approximately one hundred and two people living in the counties adjacent to San Francisco Bay were poisoned by eating mussels (Mytilus californianus) gathered on the coast. Six people (five men and one child) who had eaten nothing but mussels died with the clinical picture of the paralytic form of mussel-poisoning in from three to ten hours after the consumption of the steamed or raw shellfish. A highly potent nerve poison has been extracted and studied in the laboratory. The origin of the poison will be discussed.

3. *A Simple Conception of the Relation of Chronic Cystic Mastitis to Cancer of the Breast*—A. R. Kilgore, M. D., 724 Medico-Dental Building, 490 Post Street, San Francisco.

   Chronic cystic mastitis, or abnormal involution can be divided into two distinct pathological types according as the epithelium of the individual gland element is hyperplastic or atrophied. The hypertrophic type would be expected to be precancerous and it is clinically confirmed. The reverse is true of the atrophic type. Predominance of either type presents distinctive gross pathological features, which are recognizable at the operating table and on which treatment may be based.

4. *The Bone Sarcoma Registry* — Edwin I. Bartlett, M. D., 1020 Medico-Dental Building, 490 Post Street, San Francisco.

   The Bone Sarcoma Registry was founded by Codman in 1920. The committee has grown from three to eleven members. The purpose of the registry is the intensive study of this phase of pathology with the aid of clinical records, roentgenologic photographs, gross and microscopic material. One of the chief accomplishments has been the development of a classification. A survey is made of the work accomplished. The profession is invited to submit to the committee data of cases encountered in their practice.

5. *Clinical Value of Tuberculin Prepared from Non-Protein Culture Media—Skin Tests in Children*—Frederick Eberson, M. D., and Ernst Wolff, M. D., University of California Hospital, San Francisco.

   Five hundred and eighty children were tested intradermally with different tuberculin fractions and reactions are compared with O. T., and control culture media. A series of patients negative to O. T. and retested at intervals with one fraction and O. T. for comparison showed with the fractions more extensive and intense reactions after twenty-four hours. Allergy, especially following treatment with improvement, could be measured with greater accuracy and the diagnostic property of the tuberculin fraction appeared to be superior to that of ordinary O. T.

SECOND MEETING
Room C, Auditorium
Thursday, May 3, 2:30 p. m.

1. *The Certification of Laboratories by the State Department of Health*—W. H. Kellogg, M. D., State Hygienic Laboratory, Berkeley.

   The paper is a review of the operation of the system of voluntary laboratory approval by the State Board of Health, including the method of determining eligibility, the forms of certificates, the number of laboratories approved, analysis of laboratory situation regarding training and qualifications of workers, scope of work done, medical training of directors, etc., the new state law governing the approval of municipal laboratories and the certification of laboratory technicians by the State Department of Health.

2. *Protozoan Infestations in a Group of Medical Students —Effects of Stovarsol*—H. E. Butka, M. D., White Memorial Hospital, Los Angeles.

   The work comprises a study of the findings in seventy-five medical students, including the type of parasites found and the results of the administration of stovarsol alone.

3. *Fibrous Myocarditis* — Franklin R. Nuzum, M. D., and Richard D. Evans, M. D., Cottage Hospital, Santa Barbara.

   Fibrous myocarditis is one of the commonest of clinical diagnoses in terminal events and one which usually is not substantiated at the postmortem examination. Necropsy statistics are analyzed to determine the actual incidence and cause of this condition. The justifiability of the clinical diagnosis, fibrosis of the myocardium, is discussed.

4. *The Combination of Carcinoma and Sarcoma, with Case Reports*—Ernest M. Hall, M. D., Stanford University Medical School, San Francisco.

   Ten cases are reported in which carcinoma and sarcoma occur together in the same tumor. Although these are comparatively rare tumors, five have been observed in the Stanford pathological laboratory during the past year. The literature is reviewed and probable etiology discussed. Gross and histological descriptions are accompanied by lantern slides.

5. *Sarcoma of the Thyroid*—Elmer W. Smith, M. D., St. Mary's Hospital, San Francisco.

   A brief résumé of the rather scanty and somewhat indefinite literature is presented. Stress is laid upon the possibilities of confusion that may arise with regard to embryonal carcinomas which are occasionally encountered and which may be mistaken for sarcomas. The subject was suggested to the author after studying two cases of lymphomatous tumor of the thyroid. Data will be presented.

6. *Total Base in Gastric Secretions* — Katherine M. Close, M. D., Professional Building, 1052 West Sixth Street, Los Angeles.

   Subject is introduced by an historical résumé. Objects of author's experiments were as follows: 1. To prove presence of base in gastric secretion. 2. Its secretion by gastric mucosa. 3. Its variations during secretory phase. 4. Its variations in gastro-enterostomy cases, etc. Stimulant was histamin. The human and the dog's stomach were studied. The results are discussed.

PEDIATRICS SECTION

A. J. SCOTT, M. D.

A. J. Scott, M. D.
Chairman
900 California Medical Building
1401 South Hope Street
Los Angeles

Francis S. Smyth, M. D.
Secretary
University of California Hospital
Fourth and Parnassus Avenues
San Francisco

First Meeting
Little Theater Auditorium
Wednesday, May 2
2:30 p. m.

1. Chairman's Address—*Activities of Los Angeles Heart Board*—A. J. Scott, M. D.

   Organization and foundation of the board. General types of heart cases seen. General management of heart cases—the general rationale of the treatment is given.

2. *Work of Armand-Delille on the Development of Tuberculous Lesions in the Lungs of Infants*—Langley Porter, M. D., University of California Hospital, Fourth and Parnassus Avenues, San Francisco. (To be read by Clain Fanning Gelston, M. D., 409 Fitzhugh Building, 384 Post Street, San Francisco.)

   The slides, which were prepared by Dr. Paul F. Armand-Delille of Paris, illustrate the development of the lung lesions in infants exposed to known contacts, together with sections showing the postmortem condition in the lungs of each individual.

3. *Tuberculosis in Infants and Young Children*—Lloyd B. Dickey, M. D., Stanford University Medical School, 2398 Sacramento Street, San Francisco.

   Although the mortality of tuberculosis in the very young is quite high as compared with adult tuberculosis, it is probably not nearly so high as is generally believed. Many infants and young children, some with definite histories of intimate exposures, are capable of taking care of tuberculous infections to a satisfactory degree. Case reports, with roentgenograms, are submitted, illustrative of this.

4. *Hearing Impairments in Children*—Lawrence K. Gundrum, M. D., 1920 Wilshire Boulevard, Los Angeles.

   Cause of deafness; nose, throat, and general conditions. Deaf children from clinics and private practice tested with the Jones-Knudsen audio-amplifier. Cause when possible was determined. Treatment: removal of infected tonsils and adenoids; treatment of sinusitis; hygienic measures instituted; removal of infected lymph tissue in pharynx, etc. Tests made at one, two, and six months' intervals and at end of year. Improvement in majority of cases.

5. *Child Hygiene Division of Los Angeles County Health Department*—Elisabeth M. Saphro, M. D., 330 North Broadway, Los Angeles.

   Child hygiene began along two different lines in America: infant hygiene and school hygiene. Later a third, prenatal hygiene, was added. Today all three in a closely interlocking scheme are considered necessary. Various new phases in the development of preventive medical education are considered. (Lantern slides.)

Second Meeting

Clinic at the Sutter Hospital
Twenty-Eighth and L Streets
Thursday, May 3, 2:30 p. m.

Clinic on Poliomyelitis.*

Cases presented by Edward Saunders Babcock, M. D., 205 Physicians Building, 1027 Tenth Street, Sacramento.

Discussion by William Palmer Lucas, M. D., San Francisco; Clain Fanning Gelston, M. D., San Francisco; and Edward B. Shaw, M. D., San Francisco.

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*Cars and buses will leave the Auditorium and the Senator Hotel to take visitors to the Clinic on Poliomyelitis at the Sutter Hospital.

RADIOLOGY SECTION

HAROLD ZIMMERMAN, M. D.

H. Zimmerman, M. D.
Chairman
610 Physicians Building
1027 Tenth Street
Sacramento

Robert F. Kile, M. D.
Secretary
St. Francis Hospital
900 Hyde Street
San Francisco

First Meeting
Room B
Auditorium
Tuesday, May 1
2:30 p. m.

1. *Foreign Bodies in the Bronchus*—James B. Bullitt, M. D., 208 St. Claire Building, San Jose.

   Discussion opened by R. G. Karshner, M. D.

   A new symptom. Foreign body (walnut kernel) in bronchus. Spontaneous extrusion. A new fluoroscopic symptom—the bronchus being blocked, the foreign body acting as a valve, the side affected showed air distention; the new symptom consisted in the fluoroscopic observation of the displacement toward the affected side of the heart with each inspiration.

2. *The Diagnostic Value of Dental Radiographs*—Paul J. Boyens, D. D. S., San Francisco.

   Discussion opened by L. C. Kinney, M. D.

   1. Normal alveolar process showing those constant and indisputable signs which constitute the normal (and healthy). 2. Telltale changes denoting the earliest departures from the normal—also progressively increasing lesions. 3. How to avoid deception through anatomic variations. 4. Pyorrheal absorption—insipient, advanced and hopeless stages. 5. Retained or residual infections in edentulous mouths. 6. Infections not visible in the radiograph, and how they may be

determined. 7. Dental abnormalities, other than those of an infectious nature, which may cause systemic reactions. (Lantern slides.)

3. *Experience in Treatment of Malignancy with Colloidal Lead, with and without Irradiation*—D. S. Pulford, M. D., and J. D. Lawson, M. D., Woodland Clinic, Woodland.

Discussion opened by Albert Soiland, M. D.

Experience in treatment of malignancy with colloidal lead, with and without irradiation. A preliminary report on some thirty cases of malignancy treated with lead, with autopsy findings in six cases, especially the effect of lead on malignant cells.

4. *Indication and Contraindication for X-Ray Therapy in Fibroid Tumors*—Fred Lindenberger, M. D., 1244 Roosevelt Building, 727 West Seventh Street, Los Angeles.

Discussion opened by A. C. Seifert, M. D.

Fibromyomata do not represent a pathological uniformity, but vary in their construction. Accordingly their treatment varies depending upon the site of development, and their degenerative changes. Only a certain percentage of fibroids are responsive to x-ray therapy. I wish therefore to stress the importance of surgical interference in those cases of fibromyomata in which radio therapy is of doubtful benefit.

SECOND MEETING

Room D, Auditorium

Wednesday, May 2, 2:30 p. m.

1. *Infected Antra in Children*—D. M. Ghrist, M. D., 215 Lawson Building, Glendale.

Discussion opened by Harold Zimmerman, M. D.

We have noted that rather a large per cent of children suffering from colds in head do not obtain relief from the removal of tonsils and adenoids. Of this persistent group, we find surprisingly many have antrum involvement which can be demonstrated roentgenologically. (Lantern slides.)

2. *Fluoroscopy Examination of Paranasal Sinuses*—Robert A. Powers, M. D., 1319 Tasso Street, Palo Alto.

Discussion opened by Harold Zimmerman, M. D.

The frequency of contributing paranasal sinus infection in bronchopulmonary disease. Recent articles on this subject. Information concerning the sinuses which may be obtained during routine fluoroscopy. Limitations of fluoroscopy; not a substitute for radiography. Fluoroscopic findings checked by radiography in fifty cases.

3. *Functional Disorders of Gastro-Intestinal Tract as Shown by the X-Ray*—H. E. Ruggles, M. D., 320 Fitzhugh Building, 384 Post Street, San Francisco.

Discussion opened by R. G. Taylor, M. D.

Everyday evidence of nervous influence upon the gastro-intestinal tract, subjective and objective. Direct evidence afforded by roentgenological observation, showing changes in stomach, duodenum and colon, due to emotional factors.

4. *Modified Technique to Obtain Rapid Pyelograms with Patient Under an Anesthetic*—John R. O'Neill, M. D., St. Francis Hospital, 900 Hyde Street, San Francisco.

Discussion opened by I. S. Ingber, M. D.

A method is described to reduce the time of exposure to one-quarter second, in order that distortion, due to movement, may be reduced to a minimum.

UROLOGY SECTION

E. SPENCE DE PUY, M. D.

E. SPENCE DE PUY, M. D.
Chairman
202 Dalziel Building
532 Fifteenth Street
Oakland

WILBUR B. PARKER, M. D.
Secretary
Brack Shop Building
527 West Seventh Street
Los Angeles

FIRST MEETING

Auditorium, Room C

Monday, April 30
2:30 p. m.

1. Chairman's Address.
2. *Experience with the Colling's Electrotome*—Charles S. Vivian, M. D., Phoenix, Arizona, and Robert V. Day, M. D., 704 Detwiler Building, 412 West Sixth Street, Los Angeles.

Discussion opened by Miley B. Wesson, M. D.

The principles of the treatment. Type of case suitable. Brief description of typical cases and technique of treatment. Bladder neck obstruction. Growths and obstructions in the posterior urethra. Growths in the bladder. Results obtained. Limitations of the instrument. Summary and conclusions.

3. *Traumatic Hydrocele*—Miley B. Wesson, M. D., 1275 Flood Building, 870 Market Street, San Francisco.

Discussion opened by Otto R. Frasch, M. D.

Trauma of questionable importance as etiological factor of hydrocele. Expediency and economic factors encourage tendency to ignore the fundamental underlying infection and to emphasize strain or bruise. Traumatic hydrocele becoming a popular diagnosis and correspondingly expensive to employers of labor. Literature is reviewed; cases reported in abstract.

4. *Diphtheritic Membrane on Bladder Trigone*—Nathan Hale, M. D., 400 Capital National Bank Building, 700 J Street, Sacramento.

Discussion opened by Robert V. Day, M. D.

Case report of diphtheritic membrane on bladder trigone with diphtheria bacilli present in the urine.

5. *Treatment of Malignant Tumors of the Bladder—Special Reference to Surgical Diathermy*—William E. Stevens, M. D., Flood Building, 870 Market Street, San Francisco.

Discussion opened by Joseph Walker, M. D.

Review of literature. Relative value of surgical diathermy, surgery, radium, and roentgen therapy. Case reports. Conclusions.

SECOND MEETING

Room C, Auditorium

Wednesday, May 2, 2:30 p. m.

1. *Radiation Treatment of Certain Kidney Disorders with Special Reference to Hypernephroma*—Albert Soiland, M. D.; William E. Costolow, M. D.; Orville N. Meland, M. D., 1407 South Hope Street, Los Angeles.

Discussion opened by Lloyd Bryan, M. D.

The important uses of radiation in kidney conditions are (1) in checking kidney and bladder hemorrhage; (2) in tuberculous infections, especially postoperative tuberculous sinuses; (3) in the destruction of certain neoplasms, especially

hypernephroma. Report of an inoperable hypernephroma case, well five and one-half years after radiation treatment.

2. *Fatal Embolus Due to Inflation of Bladder with Air*—Charles P. Mathé, M. D., 844 Phelan Building, 760 Market Street, San Francisco.

Discussion opened by Charles S. Vivian, M. D.

1. Occurrence of fatal embolus due to inflation of bladder with air. Incidence obtained from questionnaire and literature. 2. Etiology. Air harmless in normal bladder. Bladder lesions, however, facilitate entrance into blood stream. 3. Case report. 4. Conclusions condemning dilatation with air and suggesting inflation with mild antiseptic solutions only.

3. *Leukoplakia of the Kidney Pelvis*—Adolph A. Kutzmann, M. D., 403 Professional Building, 1052 West Sixth Street, Los Angeles.

Discussion opened by Thomas E. Gibson, M. D.

Leukoplakia of the kidney pelvis, important: because of (1) relative rarity; (2) relationship to malignancy; (3) unknown etiology and pathogenesis. Case reported. Etiology, two theories: (1) Process one of metaplasia or adaption by cornification to an inflammatory environment. (2) Misplaced embryonal rests of primitive ectoderm. Symptomatology, that of associated urinary condition; a chronic infection upon some definite organic lesion. Treatment: Nephrectomy, when confined to one kidney; palliative, in the form of renal pelvic lavage.

4. *Ureterography with the Dilating Catheter*—Henry A. R. Kreutzmann, M. D., 406 Central Medical Building, 1195 Bush Street, San Francisco.

Discussion opened by William Stevens, M. D., San Francisco.

Dilating catheter, devised by author, used to study the human ureter. Inserted just beyond ureteral orifice, an excellent picture of normal ureter for entire length and relation to the surrounding structures is demonstrated. Points of constriction and dilatation clearly shown. Pictures, taken in erect posture, show effect of change of position of kidney on upper third of ureter. Method of use and cases in which use indicated explained in detail.

5. *Bladder Pressure and Volume Determination as an Aid in Diagnosis, and the Description of a New Recording Instrument*—Francis E. Redewill, M. D., 686 Flood Building, 870 Market Street, San Francisco.

Physiology of filling and emptying of bladder. Study by use of fluoroscope with barium injection fluid. Determination of pressure and volume taken by new instrument devised by writer. Enervation of bladder showing value of new instrument in helping to make differential diagnosis of injury to nerves, and determine type of obstructions. Chart showing bladder readings. (Instrument will be displayed and lantern slides demonstrating its use, shown.)

ENTERTAINMENT COMMITTEE

For Women Guests

Mrs. Frederick F. Gundrum, Chairman

Mrs. Andrew M. Henderson
Mrs. George A. Spencer
Mrs. Junius B. Harris
Mrs. William A. Lindsay
Mrs. Charles B. Jones
Mrs. George A. Briggs,
Mrs. Gustave Wilson
Mrs. G. Parker Dillon
Mrs. Charles B. McKee
Mrs. Frederick F. Seatena
Mrs. Charles E. von Geldern

ENTERTAINMENT PROGRAM

Fifty-Seventh Annual Session, California Medical Association, Sacramento, April 30 to May 3

An attractive and varied program of entertainment, amusement and recreation has been planned for those who will be in Sacramento for the fifty-seventh annual session of the California Medical Association, April 30 to May 3.

Through the Sacramento Society for Medical Improvement, Sacramento will extend the old-time hospitality for which the community has been famed since the days of '49.

There will be a dinner dance, golf tournament, trap shoot, fishing, interfraternity dinner, social activities for women, and a trip to the gold mines of the famous Mother Lode section.

Dinner Dance

The dinner dance will be held Tuesday night, May 1, at the Hotel Senator. This will be a gala occasion. It will be a brilliant affair, with excellent music, favors, dancing, a fine dinner, attended by the ex-presidents, honorary members, and distinguished guests. This event will be a time for the renewal of old friendships, the making of new friends, and the full enjoyment of an annual occasion which will mark the height of the social activity in connection with the session. The dinner dance will begin at 7:30 o'clock. Be sure to get banquet tickets when registering at headquarters at the Memorial Auditorium.

Golf Tournament

A golf tournament will be held at the Del Paso Country Club, beginning at 8 o'clock on the morning of May 1. The course on which this will be held is one of the finest in the state. There will be trophies for the first, second, and third low net scores and for the first, second, and third low gross scores. One of these handsome trophies is donated by President Percy T. Phillips. A buffet luncheon will be furnished by the committee in charge at the clubhouse following the tournament. Transportation will be provided to and from the golf links for those who do not have their own cars. Boy Scouts and road signs will direct participants to the links. All registrations will be made at the golf desk in the Memorial Auditorium headquarters on April 30. Bring your clubs!

Trap Shoot

The trap shoot will begin at 9 o'clock on the morning of May 1. The shoot will be at the traps adjoining Lindbergh Aviation Field, Auburn Boulevard. There will be three events: fifty sixteen-yard targets; twenty-five handicap targets (A. T. A. rating will govern handicap) and twenty-five pairs of doubles, sixteen yards. A luncheon will be served by the committee at the clubhouse on the grounds.

There will be merchandise prizes to high gun and runner-up in each event. Shells of all makes can be purchased at the club grounds at club rates. Targets at three cents each covers all entry fees.

A registration bureau will be maintained at registration headquarters in the Memorial Auditorium to accommodate entrants. The entry list is now open. Participants should communicate as early as possible with Dr. C. E. Schoff, chairman of the trap shoot committee, Farmers and Mechanics Bank Building, Sacramento.

The traps, which are those of the Sacramento Trap Shooting Club, constitute one of the best grounds this side of the Mississippi River. The foreground is ideal; there is plenty of shade; a new clubhouse; four concrete trap houses, fitted with Wonder traps; plenty of shade and plenty of parking space for autos. The grounds are within easy access of the city, just off a paved highway. The shoot will be handled by experienced members of the Sacramento Trap Shooting Club, which will insure a pleasant morning's recreation. There will be road signs and Boy Scouts to direct participants to the shooting grounds. Transportation will be provided to and from the grounds for those who do not have their own cars. Don't forget to bring your gun!

Trout-Fishing Trip

The disciples of Isaac Walton have a treat in store for them. The fishing season opens May 1. Arrangements have been made for a wonderful trout-fishing trip that day to fine streams about thirty miles east of Sacramento. Transportation will be provided for the fishermen and there will be guides who know right where the big fellows are waiting for the hook. Bring along your rods, tackle and boots. Angling licenses may be obtained at the trout-fishing desk at the California Medical Association headquarters in the Memorial Auditorium, April 30. This is a rare opportunity for the anglers.

Interfraternity Dinner-Smoker

The interfraternity dinner-smoker will be held April 30, beginning at 6:30 o'clock in the evening. It will be held at the Elks' Club, one of the newest and finest structures of its kind in the country. A desk will be maintained April 30 at the California Medical Association headquarters for reservations for this affair.

Trip Planned to Grass Valley Gold Quartz Mines

For members interested in visiting gold quartz mines a trip to the Grass Valley mines has been arranged for the morning of May 1. Some of these mines have been operating over seventy years and are down 8600 feet. The gold-bearing gravels are said yet to have in them today at least $250,000,000 of the precious metal.

Nevada County saw the beginning of both sluice and hydraulic mining. The first gold ledge was discovered and the first gold quartz mill located in Grass Valley.

For members who desire a subterranean excursion the Nevada County Board of Promotion have promised to supply boots and necessary paraphernalia.

FIFTY-SEVENTH ANNUAL MEETING C. M. A., AT SACRAMENTO

April 30 to May 3, 1928

Outline of Varied Program of Entertainment

All roads will lead to Sacramento for delegates to the California State Medical Association's annual convention in California's beautiful capital city, April 30 to May 3.

Sacramento then will be at its glorious best to welcome them at this spring season. Wild flowers by the hundreds of acres will mantle its surrounding hills and border its highways, rivaled only by the man-made glory of thousands of spreading acres of fresh green new-leafed deciduous orchards.

Sacramento makes the ideal starting point from which to see the Golden State's most gorgeous wonderland—spicy forests and snow-capped mountain peaks, giant redwoods and whispering pines, rivers and waterfalls, geysers and hot springs, rock-ribbed cliffs and the whispering waves of bathing beaches—an ever changing vista of coast line, mountain, and valley.

The four great national parks in California are in this northern California region, five of its six national monuments, fourteen of its eighteen national forests. Truly Paradise land for the hunter, the fisherman, or the seeker after rest and recreation.

And the hub is Sacramento, around whose early history and the discovery of gold has been written the romance of the Golden State. The radiating routes to the region of forests and lakes take one over the paved highways which mark the trails first broken by Kit Carson and General Fremont, through canyons and along streams once populous with the gold-mad miners of '49 and '50, into the land made famous in song and story by Bret Harte, Mark Twain, and Joaquin Miller.

Eastward but four hours by automobile is Tahoe, beautiful "Lake of the Skies," at the very summit of the Sierras, 6225 feet above sea level, its seventy-two miles of shore line dotted with summer resorts and the favorite summer playground for increasing thousands each year. It is reached by the Lincoln Highway route through Placerville and the scenic American River canyon, or via Auburn and the Victory Highway through a land equally inspiring.

Westward, less than four hours, is the Pacific Ocean and the land of geysers, lakes, and medicinal hot springs in the Lake County section, "The Switzerland of America."

Northward is the beautiful canyon of the Feather River; Lassen Volcanic National Park with its smoking crater, the only active volcano in continental United States; and Shasta, "God's First Mountain" to the Klamath Indians, its everlasting snow-crowned summit, 14,161 feet, visible from the highways of the valley for more than a hundred miles.

And southward, through the Bret Harte country and the historic Mother Lode are the Calaveras Big Tree Groves, first discovered and most northerly of the giant redwoods, and incomparable, indescribable Yosemite.

Several interesting trips to outstanding points of interest are being planned by the Sacramento committees—even to trout-fishing excursions for some of the Isaac Waltons, for the trout season opens April 1.

With the promise of these trips, added to the attractions which Sacramento itself has to offer and to the interest in the business sessions of the convention, all roads, indeed, will lead to Sacramento for members of the state medical profession.

TRAIN, STAGE, OR AUTO

Sacramento's location makes it exceedingly accessible from all parts of California, whether delegates plan to come by train, by stage, or by private motor.

Three railroads serve the state capital—the Southern Pacific, Western Pacific, and Santa Fe, in addition to the interurban electric lines from San Francisco, from Stockton, and from Chico.

For the southern California delegates, the popular train out of Los Angeles will be the West Coast Limited, the direct train from the southland, which leaves Los Angeles at 6:10 in the evening, arriving in Sacramento, without change, at 9 o'clock the next morning. Others will elect to make the trip by way of San Francisco, either on the Lark out of Los Angeles at 8 p. m., arriving in San Francisco at 9:30 a. m., or the Sunset Limited, leaving at 6:25 p. m. and arriving at 8:15 a. m. Those who choose this route can take the Sacramento train out of San Francisco at 10 a. m,, arriving in the convention city at 1:15 p. m. Still others may desire to make the entire trip by daylight, in which case they will select the Daylight Limited out of Los Angeles at 7:45 a. m., arriving in San Francisco at 7:45 p. m., boarding the Statesman next morning at 7:40 and arriving in Sacramento at 10:30 a. m.

The Western Pacific will serve many in the San Francisco Bay region and other sections of the north, as will also the Santa Fe, with its electric connections from Stockton.

Four stages daily out of Los Angeles, and stage line connections with every other section of California will be available to those who prefer to travel in that manner.

BOAT TRIP SUGGESTED

For those who come or return by train through San Francisco, a trip one way by river steamer will prove a most delightful and restful diversion. Palatial steamers operate on daily schedule every night except Sunday between San Francisco and Sacramento, leaving the terminal points each evening at 6:30. The new Delta King and Delta Queen of the California Transportation Company are the finest river steamers ever built, costing in excess of one million dollars each. No hotel in the land is fitted more royally than are these boats. For a restful night trip there is nothing finer available.

FOR THE MOTORIST

Motorists from the southland have the choice of two interesting and scenic routes to Sacramento. The shorter, over the Ridge Route and through the great San Joaquin Valley, is the Golden State Highway, through Stockton, 406 miles from Los Angeles to Sacramento. This traverses the heart of the great inland valley of the state, in view, for more than half the distance, of the snow-capped Sierra Mountains.

Either coming or going over this route the delegates from southern California should plan a side trip from Merced over the all-year highway into Yosemite Valley, which at this season of the year is at its wonderful best. The waterfalls, one of Yosemite's most beautiful and interesting features, are swollen to full power at this early season, affording a sight that is not given to visitors later in the summer. If a week-end visit is planned, reservations at this season must be made in advance.

The alternate route from the south is via the Coast highway, a trip of countless beautiful ocean views, 412 miles from Los Angeles to San Francisco. Out of San Francisco two alternate routes to Sacramento are offered, one via the Carquinez bridge, greatest structure of its kind in the world, through beautiful Napa County, and past the State College of Agriculture at Davis.

The other route, a new one just recently completed and which visitors are urged not to miss, is by way of the Antioch bridge and up the river highway into Sacramento. This route travels for miles along the river levee, through the heart of the "Netherlands of America," a level garden, 120,000 acres in extent, of the richest and most productive fruit and vegetable

land in the Golden State The trip over this route is 103 miles, and although ten miles longer than the route by way of Carquinez, is well worth the time.

Motorists from the north, coming down over the Pacific Highway, have the choice from Red Bluff of either the so-called West Side or East Side highways, each with its individual attraction.

Two transcontinental highways, the Victory and Lincoln, enter California from the East through the Sacramento gateway.

WHAT TO SEE IN SACRAMENTO

Sacramento, one of California's most historic cities, and one of its most attractive, will have many things of interest for the delegates to the medical convention and their guests.

Half a day can be spent, and at least a part of that time should be spent by every visitor in the state museum at old Sutter's Fort. This historic place, completely restored to its original form, marked the founding of Sacramento in 1839 as the first settlement in inland California—in reality cradled the real California of today. Here Captain Sutter, its founder, laid the foundation for California's present agricultural wealth; here, with the discovery of gold by James Marshall, one of Sutter's men, in 1848, began the migration to the Golden State in the historic gold rush of '49 and '50, which advanced western civilization by at least half a century and so quickly populated the state that it was admitted full-fledged to the Union on September 9, 1850.

Maintained by the state, the museum contains a collection of relics of the pioneer and gold-rush days which every lover of California history will find joy in viewing. Here are preserved the ore wagons and stage coaches of those "days of gold," the tools and weapons and accoutrements of the forty-niners, the spurs and saddles of the riders of the Pony Express, and countless other treasures whose value increases with the years.

CROCKER ART GALLERY

Lovers of art will find a wonderful collection, and one of the largest in the West, in the Crocker Art Gallery, given to the city of Sacramento by the famous Crocker family whose name is written large in the early, as well as the later history of California.

THE CAPITOL

The $8,000,000 group of stately capitol buildings, with its wonderful state library and other interesting departments, and forty-acre Capitol Park, with its trees and shrubbery from all parts of the world, will hold interest for every visitor.

One of Sacramento's beauties first remarked by visitors is its magnificent tree-lined streets. Giant elms lock branches overhead to form mile on mile of shaded lanes, and from an elevation, the older residence districts of the city appear almost hidden in the forest of trees.

GREAT CANNERIES

Many of its industrial plants will prove of interest. Its canneries, which will be getting under full blast for the season's run of fruits and vegetables, may be visited. Three of Sacramento's canneries are the largest in the state, and two of them the largest plants of their kind in the world. The recently completed American Can Company plant, where many of the cans are made in which California's fruits and vegetables are sent to the markets of the world, will be another industry worth seeing.

HOSPITALS

Perhaps of first interest to the medical men of the state will be the splendid hospitals, which rank among the foremost institutions in the state in the completeness of their facilities.

Above all, each visitor is certain to feel and appreciate the splendid spirit of hospitality for which Sacramento is justly and widely famed. The capital city will offer a taste of true western cordiality which will live long in the memory of every delegate and every visitor.

TRIPS OUT OF SACRAMENTO

Several trips of exceptional interest will be made available to the convention delegates.

"The Old Gold Trail," one of the first trips chosen by eastern visitors, is of equal interest to Californians. It is a short trip of 116 miles, vibrant with historic interest, to Coloma, on the south fork of the American River, where gold was discovered by James W. Marshall on January 24, 1848.

It will take you through Folsom, first outpost from Sutter's Fort in the gold-rush days and terminus of the first twenty-two miles of railroad built in California; through El Dorado, once a populous gold camp, to Placerville, the "Hangtown" of the early fifties. Thence down into the beautiful canyon of the American River to Coloma, where the giant statue of Marshall points to the spot on the river below where the epochal discovery of gold was made in the mill race on Sutter's mill.

On to Auburn, a beautiful little city which still has much of early-day interest, and back through the Orangevale and Fairoaks section, Sacramento's prosperous and growing orange and olive district and one of its most attractive fruit-growing sections.

INTO BRET HARTE LAND

Another trip is that into the Mother Lode country, frequently designated the "Bret Harte Country," where are many of the now almost "ghost cities" preserved to memory in the writings of Harte and Mark Twain.

Out through Perkins and Slough House, through the scenes of the old hydraulic washings, you come to Dry Town, Amador City, Sutter Creek, and Jackson. All these are famous towns of the early mining days, and the smooth paved roads over which your automobile travels were once rough trails which echoed to the pound of hoofs of the stage-coach teams and the startling cry, "Hands up!" of the picturesque highwaymen.

At Jackson are the great Argonaut and Kennedy mines, still extracting rich toll from the Mother Lode, their workings more than a mile underground.

The trip can be continued with unflagging interest to San Andreas, Angels Camp and farther southward, but the customary destination is the Calaveras Big Tree Grove, northernmost of the groves of giant redwoods, "sequoia gigantea," and one of the finest collections still remaining of these great trees, old when Christ was born. A side trip should be made from Murphys to Mercer's Cave and to Moaning Cave, two of the largest and most wonderful of California's subterranean marvels.

TO GRASS VALLEY

Another famous section of California's mining country can be visited at Grass Valley and Nevada City, in a trip of 158 miles, through Auburn into this noted region, and back by way of Marysville and the Garden Highway.

At Grass Valley the great Empire and North Star mines, which have been producing gold for sixty-five years, and are two of the richest and deepest mines in the world, may be visited. Nevada City, four miles beyond, is even more picturesque in its reminders of the early days, and is still the center of an area of producing mines.

Then over the old gold trail through Rough and Ready and other historic camps now only memories, to Marysville, center of a rich agricultural area and scene of gold-dredging operations, where the gravels

of the Yuba River have yielded placer gold for many years. Then across Feather River to Yuba City, county seat of Sutter, greatest peach-producing county in the world, and return to Sacramento over the Garden Highway, which follows the levees of the Feather and Sacramento rivers through the heart of one of the richest and most productive orchard sections in all the world.

TO THE DELTA DISTRICT

A variation from the mountain trips, but of equal interest, is the drive down the Sacramento River, where the highway follows along the top of the river levee through the tremendously fertile and productive delta of the Sacramento, an area becoming famed as "The Netherlands of America." Here are 120,000 acres of garden land, the deposit of centuries of overflow from the river, now safely reclaimed and protected from flood, and yielding immense crops of every known American vegetable. Nearly 50,000 acres is planted to asparagus alone, and the canneries along the river-front, and in Sacramento, put up each year 95 per cent of the world's supply of canned asparagus. Celery, spinach, beets, onions and all the other members of the vegetable family are grown, not in backyard gardens, but in tracts of hundreds and thousands of acres.

From Rio Vista a highway leads across the delta country to Fairfield, and the round trip of 110 miles can be finished by the return through the college town of Davis, seat of California's agricultural college, which is developing rapidly into one of the most important educational institutions in the state. The return to Sacramento is via the Yolo Causeway, a "road on stilts" for many miles in spanning the Yolo bypass, wasteway for the Sacramento River in flood time.

INTO HIGHER MOUNTAINS

It is probable, from present indications, that the roads into Lake Tahoe and the higher mountain wonderlands will be open to travel by the first of April this year. If so, dozens of other trips of interest and beauty, too numerous to detail here, will be available.

Certain it is that some of the visitors will be permitted to forget the worries of practice for a day or two in fishing trips which are being planned—for April first marks the opening of the trout season, and this part of California is "fisherman's paradise."

Delegates and their friends should plan the trip to the convention in Sacramento as a holiday trip, and arrange to stay over for several days in order to see all they can find time for in this beautiful and interesting section of the Golden State.

THOMAS M. LOGAN, M. D.*

California Pioneer in Public Health and Medical Organization Work—One of the Founders of the California Medical Association

Public health work in California began with the arrival in San Francisco of Dr. Thomas M. Logan in January of 1850. He had sailed around the Horn from New Orleans in a small schooner, which had consumed four months in rounding the Cape.

Doctor Logan was born in Charleston, South Carolina, July 31, 1808. He was the son of Dr. George Logan, who had practiced medicine in Charleston for many years. Dr. Thomas M. Logan graduated from the Medical College of South Carolina in 1828, following which he began the practice of medicine in Charleston. In 1832 he went to Europe and passed a year in attendance at the hospitals and clinical lectures in London and Paris. The first epidemic of Asiatic cholera in Europe occurred at about this time, and Doctor Logan was privileged to study this disease with much care. He returned to Charleston where he again took up the practice of medicine, remaining there until 1843, when he moved to New Orleans. In his new location he became a member of the staff of the Charity Hospital and later, in 1847, he received the appointment of visiting surgeon to the Luzenberg Hospital, established by the United States Government for the accommodation of soldiers returning from the campaign in Mexico. This hospital was closed in 1849, following which Doctor Logan took passage for San Francisco.

Shortly after his arrival in California, Doctor Logan became physician to the Strangers' Friend Society, which was apparently a welfare organization established for the purpose of rendering aid to stragglers in the vast horde of immigrants flocking to California to partake of the feast of gold in the El Dorado. Very much disillusioned, homesick, and in a run down physical condition, he tarried in San Francisco until April, when he left for a trip to the gold fields in order to recruit exhausted energy.

Stopping at Sacramento, he found that camp inundated. It was necessary to use small foot bridges in order to cross the streets, and in some places boats were improvised to carry pedestrians across the flooded thoroughfares. The mining regions of the Yuba and Feather rivers offered no attraction to him, and Hangtown, now called Placerville, in the American River country, did not appeal to him as a place for permanent residence.

He returned to Sacramento in August of 1850 when he immediately began the practice of medicine, laying the foundations of public health work in California, and remaining in that city until his death on February 13, 1876.

HIS OBSERVATIONS ON THE CLIMATE OF CALIFORNIA

Doctor Logan's hobby was meteorology and medical topography. He had procured scientific instruments from the Smithsonian Institute in Washington which he set up and used continuously in making measurements of precipitation, temperature, humidity, wind velocity, etc. His records of the weather in Sacramento from 1850 to 1870 were incorporated into the records of the United States Weather Bureau upon its establishment in 1870.

His interest in the climatic, social and medical conditions in his new home state was most intense.

STUDIES CONCERNING ENDEMIC DISEASES

The status of endemic diseases and the differentiation between communicable diseases in California and in the eastern and southern states became objects of close study. There was no organization of the medical profession in those pioneer days, and Doctor Logan experienced great difficulty in obtaining desired information from medical colleagues. He knew that fellow practitioners were obtaining valuable information relative to the cause and treatment of many diseases. Some of them were withholding such information, however, for their own personal benefit and evinced no desire to impart such information to other practitioners. He made the acquaintance of a small number of medical men who were willing to provide him with such epidemiologic data as they might

* Written by Guy P. Jones, of the Department of Publications of the California State Board of Health.

gather and who were willing to reply to his questionnaires relative to the possible relationship between weather and disease. Such men were few, however, and in general, there was an utter lack of cooperation between the medical men of the early fifties.

It was not until the arrival of Dr. E. S. Cooper in 1855, that definite progress was made in organizing the medical profession in California. Doctor Cooper had come to San Francisco from Peoria, Illinois, where he had been a most successful surgeon. In San Francisco he took over the chair of physiology in the medical department of the College of the Pacific.

ORGANIZATION OF THE CALIFORNIA STATE MEDICAL SOCIETY

Logan and Cooper possessed the scientific spirit, and their acquaintance and friendship led to the organization of the California State Medical Society in March of 1856. Together they issued the call for the organization meeting which was held in Pioneer Hall, Sacramento. There were about one hundred present at this meeting, double the attendance at the organization meeting of the American Medical Association a short time before.

Dr. B. F. Keene of El Dorado County was elected president; Dr. E. S. Cooper of San Francisco, vice-president; and Dr. Thomas M. Logan of Sacramento, corresponding secretary. A large number of committees were appointed and a definite program of work was outlined. All men who called themselves doctors of medicine, regardless of qualifications, were admitted to the society. This was necessary in order to bring the organization into existence. There were three parties, or cliques, each of which developed considerable strength during the two years that followed the organization of the society. One of these was composed of the earlier residents of California, "old established practitioners," who were willing to have medical discussions provided only certain men were allowed to participate. Another group, small in number, was composed of old as well as recent arrivals, men who were anxious to see justice done to all; and who had no animosities to settle and who were strongly bent upon making the society one for real medical improvement. The third group, composed mostly of newcomers, were ready to make concessions for maintaining harmony. There was violent conflict between the first and the third groups. The first group had long been accustomed to habits of idleness, avidness and ease; and its members were more fond of amusement than study and could not brook the idea of being compelled to go to work in earnest for the advancement of medicine on this coast, nor could they bear the thought of losing their claims of prestige through the organized system, study and activity of others. These conditions led to open warfare and violent meetings. As a result, the activities of the State Medical Society ceased in 1860, and for ten years there was really no society in existence, although a paper organization was carried on for four or five years. Doctor Cooper died in 1862 at the age of forty-six.

In 1863 Doctor Logan was appointed by the American Medical Association, at its annual meeting, as chairman of a special committee on the medical topography of the Pacific Coast. This provided him with authorization for carrying on his public health activities. He sent questionnaires concerning communicable diseases to medical men throughout the state, continued his weather observations, wrote extensively for medical journals, and spent a large part of his time in the study of communicable diseases in California.

In 1865 one of the medical journals commented: "There is not a medical society in California nor, as far as we know, anywhere in the three states of the Pacific. It makes our ears tingle to record the shameful fact. Not even in San Francisco, where there are two hundred regularly educated physicians, is there an association of medical men."

In 1867 Doctor Logan went to Paris to attend the Medical Congress, and from that city he wrote as follows: "So little does the great world value our devotion to the cause of that science which especially concerns itself with life and health! Without these, of what value are all the honors and glorifications of this vain world?" This statement seems to epitomize Doctor Logan's point of view, for in 1868 and 1869 his activities along public health lines increased greatly. During those years he wrote extensively upon smallpox, "mushroom poisoning," "fevers," and other subjects which have direct bearing upon the health of the general public. His prestige among members of the profession was growing, and his steadfast hold to the truth in medicine made him an outstanding figure among his colleagues.

ORGANIZATION OF CALIFORNIA STATE BOARD OF HEALTH

Meanwhile the idea of organized state boards of health had been launched on the Atlantic seaboard. Massachusetts was the first to establish the idea in concrete form by means of legislative enactment for the organization of a state board of health in the fall of 1869. Logan, in constant touch with medical affairs in the eastern states, became enthusiastic over the action taken in Massachusetts. He saw an opportunity for bringing about the realization of his dreams of twenty years. Almost single-handed he put through the legislation which brought into being the California State Board of Health, and in April of 1870 that board began its functions, which have been carried on continuously ever since. Doctor Logan became the first secretary of the board, which office he occupied until his death in 1876.

REORGANIZATION OF CALIFORNIA STATE MEDICAL SOCIETY

He was now in a position to act as leader of the medical profession in California, and he gathered together the broken strands in the organization of the State Medical Society. He issued a call for a reorganization meeting, which was held October 19, 1870, and at that meeting he was elected president of the society. In his address, made at that time, he referred to the lamentable Cooper and to the important part that Doctor Cooper had played in medical affairs in the pioneer days of California. The keynote of his address was in the statement: "We hear of triumphs over death and the grave with as much enthusiasm as the great world now reads of victories on the battlefield."

Organized public health had been established in California coincidentally with the reorganization of the medical profession, both of which were destined to operate continuously thereafter. Doctor Logan occupied the focal point in both organizations. He worked prodigiously in the advancement of the profession, and heavy demands were made upon his time for addressing societies and public meetings.

OTHER POSITIONS OF RESPONSIBILITY

He was appointed professor of hygiene in the University of California, and in 1873 was elected president of the American Medical Association.

The reports issued by Doctor Logan during the six years that he was secretary of the California State Board of Health are, in many respects, as high grade as any public health reports that are issued today. It must be remembered that they were written a decade before the period of bacteriology began. They reveal the scientific spirit of the man, his unselfishness, his energy and his desire to make himself of service to the people of his state.

He died of pneumonia, which followed a period of overwork in efforts to strengthen the public health laws of that time.

TRIBUTE BY DOCTOR HATCH

Upon his death, Dr. F. W. Hatch, his successor as secretary of the California State Board of Health, gave the following appreciation of Doctor Logan's place in medicine in California: "Nor have we forgotten the conservative spirit which he displayed in

the consideration of questions of a purely medical nature, occasionally arising in his intercourse with the members of the profession in the consultation room. It has been said that Doctor Logan was skeptical of medicine and its availability in the treatment of disease. Such was not the fact. Educated many years ago, during the era when heroic medication was in the zenith of its popularity, his later attendance, while still a young man, in the Parisian schools prepared him for the ready reception of that important system or method whose doctrines molded his subsequent life and which were so prominently conspicuous in his treatment of ordinary diseases. In his judgment, matured by his long experience, nature was to be aided rather than coerced, sustained rather than subdued, and if in the reactions that followed he erred at all, it was always on the side of nature and in defense of a sound conservatism. Yet no one who knew him will deny that on those critical occasions when promptitude of action was called for, when life itself rested upon the adoption of a bold and decisive interference, none was more quick to discover, nor more heroic in his treatment than Doctor Logan. The last few years of his life, as we all know, were devoted mainly to the study of hygiene and sanitary laws. The California State Board of Health was, in fact, the offspring of his zeal and energy in this direction—the conception of his own mind, designed to disseminate useful information among the people of the state, to gather facts regarding the climate of California and its relation to disease."

DOCTOR LOGAN'S PERSONAL AND PROFESSIONAL ATTRIBUTES

Doctor Logan's career was nothing short of remarkable. Isolated from the leaders in medical education and scientific societies in eastern states, completely separated by desert and mountain ranges, and from those advantages of civilization for which he had the deepest regard he was able nevertheless to maintain his individual scientific point of view. For several years in the early fifties, because of slow transportation, many long weary months were necessary in awaiting replies to important communications. The establishment of the Pony Express facilitated the exchange of letters with his eastern colleagues, and the building of the transcontinental railroad in 1869 ended the long isolation from which he had suffered. In the midst of the avariciousness and cupidity rampant in the days of gold he labored only for the advancement of medicine and of the public health. In those days, when educated professional men were leaving their work to gather in the precious gold, Doctor Logan remained steadfast to the ideals that were his. Everything that had to do with his profession and its influence was sacred to him. All of his intellectual attainments were given to the advance of his profession, and never did he deviate from the path of duty that lay before him. His attitude toward medicine and public health is well summarized in the following remarks made by him at the organization meeting of the California State Medical Society, March 13, 1856: "The position occupied by us as citizens of California is, by the teaching of all history, that to which the geographical march of civilization is destined to advance, with the light of truth, to the conquest of the whole earth; and whereas, the science of medicine is vitally connected with the great evangelizing social work of the diffusion of knowledge, we owe it to ourselves, to the world and prosperity, by a wise activity—the first condition of all progress—to resort to every available means which may inure to the glorious results whereto all civilized society aspires; and, although our profession as well described by one of its illustrious advocates 'is a restless profession, whose history is a constant innovation and continual discovery, its pride that it cannot stand still as the world advances in science,' so that it is impossible that the facts and discoveries in medicine can be fully appreciated, except by those who devote their whole time to its laborious study, still it is probable that by extended facilities of information and educational improvement sufficient data for correct judgment upon the most important subject that can engage the attention of man—his life and health—may be made familiar to the public mind."

State Building.

How to Prevent Tastes in Chlorinated Waters—Serious problems have arisen in some localities in the state due to unpleasant tastes developing in public water supplies after chlorination. Such tastes may be avoided or remedied in most cases if the cause is determined.

Tastes in chlorinated water may be subdivided into three groups: First, the taste of chlorin itself may be present in the water. This is due to the fact that the dose of chlorin is larger than necessary or that it has to be maintained unusually high because of the absence of, or ineffective, filtration. The remedy in such cases is the proper control of the chlorin dose or the construction of water purification or filtration plants. The second group of tastes are due to the reaction of chlorin with organic matter, introduced by the decay of vegetation and microscopic organisms in reservoirs or by the discharge of certain organic wastes into streams and lakes used as sources of water supply. The remedy in this case is the prevention of growths of excessive numbers of micro-organisms in reservoirs by the suitable use of copper sulphate and the prevention of stream pollution by organic wastes.

Taste-producing reaction products between organic matter and chlorin frequently may be destroyed by increasing the chlorin dose which transforms the organic matter into tasteless products. In such cases an actual increase in the chlorin dose will lead to improvement in the taste of the water, which is contrary to what is usually accepted to be the case.

The third group of tastes are of great importance in sections of the country where by-product coke ovens are located. These tastes are due to the reaction of chlorin and phenolic wastes which are discharged in considerable quantities from coke plants and certain other chemical factories. When phenol reacts with chlorin, very obnoxious tastes are produced even in small concentrations. The remedy for these tastes consists of two independent procedures: The first is based on prevention, the second on destruction. In the first, the discharge of phenolic wastes into surface waters is prevented by the use of phenol recovery plants, by the treatment of such wastes in municipal sewage disposal plants, or by the quenching of coke with the wastes containing phenol; the second consists in destroying or modifying the taste-producing substances by special methods of treatment of the water supply. Three methods are available in accomplishing the result: (*a*) "superchlorination," which consists of the use of relatively large doses of chlorin. This leads to the destruction of the phenolic wastes. Then after a suitable reaction period, the excess chlorin is removed by the addition of sulphur dioxid gas, for otherwise chlorin tastes would be produced. (*b*) The destruction of phenolic wastes which may be present in the raw water by the use of potassium permanganate. (*c*) The third procedure is to add ammonia in small quantities to the water just previous to the addition of the chlorin dose. This results in the formation of a stable disinfectant known as "Chloramin," which does not react with the phenolic compounds to form taste-producing substances.

The prevention of tastes in water supplies is frequently a complicated problem and the solution depends upon the consideration of many local factors. The Division of Sanitation is prepared to assist local authorities in the study of these problems.—*Health News.*

STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

PERCY T. PHILLIPS.....President
WILLIAM H. KIGER.....President-Elect
T. HENSHAW KELLY.....Vice-President
EMMA W. POPE.....Secretary-Editor

OFFICIAL NOTICES

Administration of Anesthesia—The attention of the members of the California Medical Association is called to a resolution passed by the Board of Medical Examiners regarding the administration of anesthetics by persons unlicensed to practice medicine, which resolution, with accompanying letter, is published in this issue under "Readers' Forum" on page 546.

Official publication of said resolution constitutes notice to physicians and surgeons according to the resolution.

Southern Pacific Schedule—The Southern Pacific Company has furnished the following train schedule for the annual meeting at Sacramento:

SACRAMENTO TO LOS ANGELES

Train No. 31-52

Leave Sacramento	9:00 a. m.
Arrive Lathrop	11:24 a. m.
Leave Lathrop (No. 52)	11:31 a. m.
Arrive Bakersfield	5:02 p. m.
Arrive Los Angeles	11:15 p. m.

****Train No. 61-60**

Leave Sacramento	5:30 p. m.
Arrive Bakersfield	1:45 a. m.
Arrive Los Angeles	8:30 a. m.

Note: Trains marked ** are through trains; on all other trains it is necessary to change cars at Lathrop.

LOS ANGELES TO SACRAMENTO

Train No. 51-38

Leave Los Angeles	7:50 a. m.
Leave Bakersfield	1:38 p. m.
Arrive Lathrop	7:08 p. m.
Leave Lathrop (No. 38)	7:15 p. m.
Arrive Sacramento	9:25 p. m.

Train No. 57-210

Leave Los Angeles	12:10 p. m.
Leave Bakersfield	6:43 p. m.
Arrive Lathrop	4:05 a. m.
Leave Lathrop (No. 210)	4:42 a. m.
Arrive Sacramento	7:00 a.m

****Train No. 59-62**

Leave Los Angeles	6:10 p. m.
Leave Bakersfield	12:37 a. m.
Arrive Sacramento	9:00 a. m.

Note: Trains marked ** are through trains; on all other trains it is necessary to change cars at Lathrop.

Sacramento River Boats—The "Delta King" and "Delta Queen" are new de luxe steel steamers with ninety-eight staterooms and twenty-eight suites each equipped with private tub or showers. These boats accommodate forty automobiles. They leave San Francisco at 6:30 p. m. daily except Sunday; arrive in Sacramento at 5:30 a. m. the following day. Passenger transportation, $1.80 one way; $3 round trip. Automobile transportation each way, $7.50.

Los Angeles Steamship Company—Northbound—SS. Yale and SS. Harvard leave San Diego, 9 a. m. and Wilmington (Los Angeles harbor), 4 p. m. Tuesday, Thursday, Friday and Sunday. Arrive San Francisco, 10 a. m. the following morning.

Southbound—SS. Yale and SS. Harvard leave San Francisco, 4 p. m. every Tuesday, Thursday, Friday and Saturday, arriving at Los Angeles harbor (Wilmington) the following day at 10 a. m. Leaves Wilmington at 3 p. m. and arrives at San Diego at 8 p. m.

Reservations—Reservations for Hotel Senator were filled early in March. Hotel Sacramento, Hotel Land, and other Sacramento hotels had available reservations when this issue went to press.

Hotel Sacramento rates:

Single room with bath or shower, $3 and 4.
Double room with bath or shower, $4 to $6.

Hotel Land rates:

Single room without bath $2.
Double room without bath, $3.
Single room with bath, $2.50 and $3.50.
Double room with bath, $4 to $6.

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The regular meeting of the Alameda County Medical Association was held February 20 at the Ethel Moore Memorial Building, with President J. L. Lohse in the chair.

The regular program of the evening was preceded by the report of a case of unilateral chorea by Dr. A. A. Bird.

The scientific treat which followed was prepared by Dr. R. T. Legge and consisted of papers by members of the faculty of the University of California.

Professor Kofoid spoke first on "Some Recent Researches in Parasitology," discussing experiments now being carried on under his direction in the study of entameba dysenteriae, and particularly the experiments which deal with the cultural characteristics of these parasites. They have for the past forty-two months carried forward cultures of a single strain of entameba dysenteriae making daily transplants. In order that a successful growth result it is necessary to carry over at least twenty-five hundred protozoa as counted in a hemocytometer. Their researches show that ameba divide about six times in twenty-four hours, giving a rate of division much in excess of that formerly believed to be the case. The doctor discussed a substance produced by the ameba in the media which acted as an accelerant to their growth. This substance when carried over to fresh media enables the organisms transplanted to grow with greater rapidity and vitality than on media which is free from these excretions of the organisms. The nature of this substance is unknown, but it is a practicable point in the explanation of flare-ups which occur so commonly

in this infection. The overfed parasite which is discharged in the pus from amebic lesions is moribund. This organism contains red blood cells, but within the blood vessel the parasite does not feed on red cells but on serum proteins. Cyst-like forms have been found in the deeper tissues suggesting the possibility that in poor surroundings the parasites may encyst in order to resist deleterious forces.

In the study of the effect of radium upon these organisms it is found that exposure to large doses had little or no effect unless the ameba are suspended in dilute solutions of salts of the heavy metals as, for instance, lead or uranium. Smaller doses and shorter exposure kill the organisms so suspended. Amebae resist freezing, but are very sensitive to changes in Ph value. In their metabolism they require every salt found in the human body.

Second on the program was a talk by Dr. I. MacLaren Thompson on "Some Recent Advances in Anatomy." He discussed recent researches in the relations between the spleen and red blood cell and hemoglobin. Pointing out that the spleen is a reservoir for blood, particularly for red blood cells and hemoglobin, both of which substances are concentrated in this organ. The accumulation of blood in the spleen has been shown to be in part due to contraction of the musculature of the splenic vein which so varies its lumen as to cause damming back of blood. The suggestion has been made that some of the splenomegalia may be due to alterations of this kind. The mechanism of the concentration of blood is not well understood. The greater portion of the time allotted to Doctor Thompson was utilized in the discussion of researches on the semicircular canals describing in detail their functions and recent researches thereon.

Professor C. L. A. Schmidt spoke on the subject of "Some New Aspects in Biochemistry," discussing the uses of calcium in the body and certain experiments carried out to determine what portion of the calcium of the blood is carried in organic combination.

The annual banquet of the Association was held on March 1 at the Hotel Oakland at which time the principal speakers were Paul Cadman, professor of economics at the University of California, and Dr. H. N. Rowell.

GERTRUDE MOORE, *Secretary.*

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CONTRA COSTA COUNTY

The regular monthly meeting of the Contra Costa County Medical Society was held at the nurses' home of the County Hospital at Martinez at 8:15 p. m., March 10.

As is the custom of this society for the year 1928, subjects are presented by east and west sections of the county on alternate months and discussed by the members. The subject for the current month in the eastern part of the county was Rheumatism and Arthritis. Dr. John Beard opened the meeting, and a lively discussion was carried on by all members of the society. We learned much from one another.

Application for membership was received from H. D. Neufeld. The nurses of the hospital prepared for us a most delightful after-meeting lunch, which all the attendant members fully appreciated. The following members and visitors were present: F. L. Horne, C. R. Leech, E. Merrithew, Rosa A. Powell, Marguerite Keser, H. D. Neufeld, John Beard, H. L. Carpenter, Dr. I. A. Church, county health officer; Miss Agnes Driscoll, R. N.; Mrs. Elizabeth Redmond, R. N.; Doctor Buckmann, G. W. Sweetser.

L. ST. JOHN HELY.

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FRESNO COUNTY

At a meeting of the Fresno County Medical Society, held at the Fresno Hotel on March 6, interesting lectures were given by Dr. Dudley Smith and Dr. A. R. Kilgore of San Francisco.

Doctor Smith discussed practical points with regard to rectal examinations and stressed the importance of using the proctoscope in all cases presenting symptoms suggestive of disease of the rectum or colon. He described in detail the technique of his abdominoperineal operation for cancer of the rectum.

Doctor Kilgore gave a comprehensive review of present-day cancer research. He considers that cancer is not caused by bacteria, but that cells, for some unknown reason, break away from control just as occasionally they do in the early life of the fertilized ovum, to give rise to teratomata. Doctor Kilgore thinks that until we know more about the normal control of cells we shall not discover the cause of cancer. It is important to eradicate from the public mind the idea that cancer is caused by germs, and that there is a likelihood of a serum being developed that will cure cancer.

An interesting discussion followed by Dr. W. T. Barr, Dr. W. G. Milholland, Dr. F. R. Ruff, and Dr. J. H. Pettis.

JOHN M. FRAWLEY, *Assistant Secretary.*

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LOS ANGELES COUNTY

The Los Angeles Obstetrical Society held a joint meeting with the Los Angeles County Medical Association on February 15, considering the analysis of 745 records of cesarean sections done in nine leading hospitals in a five-year period ending December 31 last. The hospital incidence ranged from one in 14.5 to one in 122.5. During the same period the Los Angeles General Hospital had six thousand deliveries, a large proportion being selected pathological material, with 171 cesareans, an incidence of one in thirty-five.

Dr. W. B. Thompson presented the series of 625 classical sections, emphasizing that 306 were upon patients with normal pelves, 116 had had previous sections, and of these, seventy-eight had normal pelves. One hundred and sixty patients were sterilized, of whom sixty-one were multiparae undergoing their first section. The mortality, twenty-seven, was highly creditable, but included ten deaths from sepsis; of the latter, six had been in labor 18 to 120 hours. Dr. John Vruwink reviewed 120 low cervical sections of which only five were elective sections based on disproportion. Seventy-six patients had been in labor for an average of twenty-six hours and ranged up to 104 hours. There were no deaths from sepsis.

Dr. E. J. Krahulik considered nine ruptured cesarean scars, all following classical section; three were not in labor, and three died. He outlined the procedure necessary if one elected to allow a scar to attempt the strain of labor. Dr. H. S. Fist demonstrated a new obstetrical manikin, capable of being manipulated during examinations by the student on the female manikin. This is the first improvement in fetal manikins since 1890.

WILLIAM BENBOW THOMPSON,
Secretary Obstetrical Section.

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ORANGE COUNTY

At a meeting of the Orange County Medical Association Tuesday evening, March 6, at the Orange County General Hospital, there was a large attendance of doctors, nurses, and public health workers.

The occasion was a meeting in line with the campaign of the National Tuberculosis Association to emphasize the need for early diagnosis of tuberculosis.

Dr. E. W. Hayes of Monrovia was the speaker of the evening and stated that every person with that "tired feeling," poor appetite, loss of weight, slight cough, pain in the chest, or so-called "run-down condition," should be suspected of having tuberculosis.

"Early diagnosis by complete physical examination, x-rays of chest and examination of the sputum followed by proper treatment gives the person with tuberculosis a very hopeful outlook for early recovery," he said.

Motion pictures entitled "The Doctor Decides" gave a good story of a "tired business man" who found he had tuberculosis, faced that fact and with proper treatment made prompt recovery.

Clinics and chest examinations are to be held in the high schools of Orange County under the auspices of the State Tuberculosis Association. High school stu-

dents who are in a "run down" or underweight condition will be able to take advantage of examination by a specialist in pulmonary tuberculosis.

F. Harold Gobar, *Secretary.*

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SAN BERNARDINO COUNTY

Minutes of the meeting of the San Bernardino County Medical Society, held at the San Antonio Community Hospital in Upland, March 6.

The meeting was called to order by the president at 8:15. Minutes of the previous meeting read and approved. The president announced that owing to the length of the program the business section would be put over until the next meeting. The appended symposium on Surgical Handicap Due to Delay was discussed under the following headings: Traumatisms and Infections—Sidney R. Burnap, M. D. Malignancies—Charles S. James, M. D. The Importance of Urologic Study—A. A. Kutzmann, M. D. Surgery from the Internist's Viewpoint—Dudley Fulton, M. D. Surgery in Retrospect—A. H. Zeiler, M. D.

Discussions were opened by Frank J. Breslin, M. D., C. G. Toland, M. D., Walter Wessels, M. D., and A. J. Scholl, M. D., of Los Angeles, and P. M. Savage, M. D., first paper; F. F. Abbott, M. D., second; E. J. Eytinge, M. D., third; G. G. Moseley, M. D., fourth; and C. G. Hilliard, M. D., fifth.

The discussion was free and gratifying.

Doctors Breslin and Scholl were not able to be present, but Doctor Percy gave a special discussion of Doctor James' paper. Otherwise the program was given as arranged.

Following the conclusion of the program a motion was passed, directing the secretary to send an individual letter of thanks to each member contributing to the program.

Luncheon served at 10:30. Meeting adjourned.

E. J. Eytinge, *Secretary.*

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SAN DIEGO COUNTY

Dr. John Lichty, superintendent of the Clifton Springs Sanitarium, Clifton Springs, New York, spent a few days in San Diego during February. Doctor Lichty is one of the regents of the American College of Physicians and was interested in meeting the local men of the college as well as others doing internal medicine.

The February dinner of the medical society was held at the charming home of the Thursday Club on Sunset Cliffs, where the young ladies of the club served an excellent dinner, after which the society listened to an illustrated talk on Classification and Treatment of Heart Diseases by Dr. William J. Kerr of San Francisco. The doctor, who is well known by the San Diego profession as a teacher and research worker at the university, handled his subject with a clarity of style and comprehensive grasp of the subject very pleasing to his audience.

The February staff meeting of the Scripps Memorial Hospital featured case reports by Dr. Hall G. Holder and Dr. Clyde J. Osborne. They also presented a pathologic specimen of an ovarian cyst of an unusually large size for these days.

At the monthly staff meeting of Mercy Hospital, February 21, Dr. Hall G. Holder read an excellent paper on "Spinal Anesthesia, with Special Reference to the Use of Ephedrin." Discussion by Doctors Oatman, St. Sure, Hoover, and Higbee. Dr. Otto Weiskotten gave a paper on "Unusual and Interesting Cases," illustrated by lantern slides of rare and startling radiography. This paper was discussed in general by the staff, and while nothing in this notice proclaims a comedy, it is due the essayist that his reporter state that the presentation and discussion carried with them so much merriment that the rafters trembled.

The Academy of Medicine presented for three nights during March Dr. Julius Bauer of Vienna, an internist of world renown. A more detailed report of this course will be given later.

Robert Pollock.

SAN FRANCISCO COUNTY

A dinner, aptly described by Dr. Reginald Knight Smith, toastmaster, as "unique, original and without precedent," was given in honor of Dr. Walter B. Coffey, Saturday evening, March 3, at the Palace Hotel, San Francisco. Some four hundred leading doctors came from all sections of California to express their friendship and appreciation for the great services which Doctor Coffey has rendered. At the speakers' table alone there were representative members of the medical profession from twenty-five different counties.

Doctor Coffey was the chief speaker, and he delivered an address that will long be remembered. Out of the abundance of his wide experience he reviewed many of the problems confronting our profession in this state and gave some practical suggestions as to how they ought to be met. He discussed the socialization of medicine, various cult problems, the proper attitude of older doctors to their younger colleagues, the private practice of medicine by tax-supported institutions, ways in which universities and practicing physicians can advance one another's interests, and the value and need for constructive publicity. As other speakers did, Doctor Coffey paid high compliment to *Better Health* magazine and to the "Better Health Service" which has been successfully conducted and edited by the League for the Conservation of Public Health for many years.

Among the speakers who were called upon by the chairman, Dr. Reginald Knight Smith, to address the distinguished gathering were Doctors Ray Lyman Wilbur, Langley Porter, James W. Ward, O. D. Hamlin, Edward T. Dillon, P. T. Phillips, Ernest A. Bryant, Mariana Bertola, and Messrs. Hartley F. Peart and Celestine J. Sullivan.

The guest of honor and all the other speakers emphasized the chief need of today which Doctor Coffey expressed as "unity and useful cooperation for the benefit of the people and profession of every county of California."

T. Henshaw Kelly, *Secretary.*

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SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held March 1 in the hall of the Medico-Dental Club, 242 North Sutter Street. Dr. John J. Sippy, president, in the chair.

The meeting was called to order at 8:30 p. m., with an attendance of twenty-eight. Those present were: Drs. E. A. Arthur, N. P. Barbour, J. W. Barnes, Winifred Biethan, E. L. Blackmun, J. F. Blinn, H. J. Bolinger, C. A. Broaddus, Fred J. Conzelmann, J. F. Doughty, Linwood Dozier, C. F. English, P. B. Gallegos, L. M. Haight, L. R. Johnson, H. E. Kaplan, Grace McCoskey, W. T. McNeil, F. S. Marnell, J. E. Nelson, D. R. Powell, G. H. Sanderson, J. J. Sippy, J. A. Smither, Margaret H. Smyth, C. V. Thompson, G. J. Vischi, and James Eaves of San Francisco, guest and speaker of the evening.

The minutes of the previous meeting were read and approved. The chairman of the Constitution committee, Dr. H. E. Kaplan, read a temporary draft of the amendment to the Constitution and asked for an extension of time, which was granted.

The president, Dr. John J. Sippy, gave a brief report of his five years' work as health officer of the San Joaquin health district. He remarked that: "Public health is purchasable and has been well exemplified in this community. Not only have we seen declines in specific death rates from all acute communicable diseases, but reductions in infant and maternal mortality and in our general death rate have been most satisfactory. While gross expenditures of the department show increases these have not kept pace with the growth of population, and per capita costs have decreased from 91.3 cents in 1923 to 88.3 cents for the present fiscal year. In addition the special tax for department support has been reduced from ten to nine cents on each $100 assessed valuation. Public health expenditure in 1920 under the part-time system was 88.7 cents per capita. Centralized effort

not only pays in results, but is actually more economical in administration. We thank you all and only ask the same continued and gratifying cooperation of practitioners as we have had in the past."

The chairman then introduced Dr. James Eaves of San Francisco who spoke on "Problems Peculiar to Industrial Medicine."

Doctors Sanderson, Powell, Dozier and Johnson discussed the talk and many questions were asked which Doctor Eaves answered in an instructive and practical way.

The Chair tendered the speaker the thanks and appreciation of the society for a pleasant and instructive evening.

There being no further business the Chair declared the meeting adjourned at 10:30 p. m.

FRED J. CONZELMANN, *Secretary.*

VENTURA COUNTY

The regular monthly meeting of the Ventura County Medical Society was held at the offices of the Ventura medical group on January 10. Dr. H. O. Bames of Los Angeles read a paper on "Scarless Surgery," illustrated with lantern slides. The following officers were elected for the ensuing year: L. W. Achenbach, president; D. G. Clark, secretary-treasurer; delegate, J. Bianchi; alternate, F. E. Blaisdell, Jr.

A special meeting was held at Pierpont Inn on January 31 to discuss county hospital problems. Fifteen members and Doctor Duffield, our councilor, were present. A committee consisting of J. Bianchi, F. E. Blaisdell Jr., and W. R. Livingston reported on their investigation of conditions existing at the hospital and presented their recommendations. The recommendations were endorsed by the society and the secretary instructed to forward a copy to the board of supervisors before their next meeting. The society also expressed their approval and extended a vote of confidence to Doctor Homer for his efficient work as county physician in the past.

J. E. Whitlow presented his resignation from the society which was accepted.

D. G. CLARK, *Secretary.*

CHANGES IN MEMBERSHIP

New Members

Alameda County—John Nevison Force, Berkeley; William O. French Jr., Clifford V. Mason, Edith M. Meyers, Oakland.

Fresno County—Warden T. Barr, Michael Hagopian, Hjalmer A. Jacobson, Frank R. Ruff, Fresno.

Humboldt County—George B. Brown, Eureka.

Imperial County—Orley H. Van Eman, Calexico.

Los Angeles County—Philip E. Ayer, Hollywood; Homer M. Barron, Douglas L. Gamette, Samuel L. Perzik, Fred A. Polesky, Harry A. White, Lawrence F. White Los Angeles; Montrose R. Burrows, Pasadena; Ephraim G. Hughes, Raymond W. Kelso, Long Beach; Roger S. Palmer, Pomona; George P. Shidler, Torrance.

Marin County—L. L. Robinson, Larkspur.

Merced County—Percival L. Rookledge, Livingston.

Monterey County—Hubbard Spencer Hoyt, John A. Merrill, Monterey.

Orange County—Charles Glenn Curtis, Brea; S. Theron Johnston, G. Emmett Raitt, Santa Ana; Lyndon E. Taylor, Orange.

Riverside County—Howell E. Babcock, Hervey S. Faris, Reynolds D. Smith, Riverside; Joseph C. Friedman, Banning; Donald D. Roos, Corona.

San Diego County—Ronald O. Logsdon, Thomas S. Whitelock, San Diego.

San Francisco County—Archibald E. Amsbaugh, Charles E. H. Bates, John Joseph Carroll, Claude E. Emery, Kristbjorn S. Eymundson, William B. Faulkner Jr., William Fritschen, Stacy R. Mettier, William W. Newman, Evelyn Raynolds Ott, James F. Rinehart, Ralph Soto-Hall, William L. Thomson, San Francisco.

San Mateo County—John M. Cruikshank, San Mateo; J. M. Huston, Burlingame.

Santa Barbara County—Charles G. Baird, Santa Maria.

Santa Clara County—Harry J. Arnold, Milpitas; Ajika Amano, Helen Bruckman, Leland A. Childers, Charles A. Fernish, Henry M. Gay, C. A. Sullivan, San Jose; William Horace G. Jones, Los Gatos; Walter I. Merrill, Campbell; Frederick Proescher, Agnew; Thomas A. Storey, Palo Alto.

Solano—John Edward Hughes, H. Walbridge Hyatt, Vallejo.

Sonoma County—Lyde H. Bernard, Pearl V. Konttas, Thomas Hubert Reiss, Santa Rosa; Murdoch Alfred Craig, Lakeport; Earl Lane Lupton, Chester Marsh, Sebastopol; Ira A. Wheeler, Cloverdale.

Tehama County—J. L. Faulkner, Red Bluff.

Tulare County—Donald Fowler, Exeter; Henry A. Rivin, Delano.

Yuba-Sutter Counties—R. R. Craft, Marysville.

Transferred Members

Bard S. Berry, from San Francisco to Santa Barbara County.

D. Grant Clark, from Santa Barbara to Ventura County.

Esther B. Clark, from San Francisco to Santa Clara County.

Lambert B. Coblentz, from Santa Barbara to San Francisco County.

N. J. Crisp, from Sonoma to Solano County.

Robert E. Hughes, from Stanislaus to Merced County.

Benjamin H. Pratt, from Tulare to Fresno County.

John H. Regan, from Los Angeles to Orange County.

I. S. Ritchie, from San Bernardino to Imperial County.

P. K. Telford, from Tuolumne to Merced County.

Resignations

Robert M. Culler, Santa Barbara.

Zoe M. Ruth, Los Angeles.

James R. Scott, Berkeley.

William R. Varick, Santa Barbara.

Deaths

Goodale, George W. Died at San Francisco, February 26, 1928. Graduate College of Physicians and Surgeons, California, 1900. Licensed in California, 1901. Doctor Goodale was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Hanna, William J. Died at Mare Island, January 24, 1928, age 63 years. Graduate Cooper Medical College, California, 1889. Licensed in California, 1890. Doctor Hanna was a member of the Sacramento County Medical Society, the California Medical Association, and the American Medical Association.

Merritt, George W. Died at San Francisco, March 8, 1928, age 72 years. Graduate Medical Department University of California, 1882. Licensed in California, 1887. Doctor Merritt was a member of the San Francisco County Medical Society, the California Medical Association, and the American Medical Association.

Moore, Melvin L. Died at Los Angeles, February 25, 1928, age 69 years. Graduate Rush Medical College, Illinois, 1880; Bellevue Hospital Medical College, New York, 1882. Licensed in California, 1888. Doctor Moore was an honorary member of the Los Angeles County Medical Association, the California Medical Association, and a Fellow of the American Medical Association.

COUNCIL MINUTES

Minutes of the One Hundred and Seventy-First Meeting of the Council of the California Medical Association

Approved at the One Hundred and Seventy-Second Meeting of the Council

Held in room 242 of the Biltmore Hotel, Los Angeles, California, Saturday, October 8, 1927, at 10:30 a. m.

Present—Doctors Phillips, Kiger, Kelly, Gibbons, Hamlin, Kinney, Duffield, Bingaman, DeLappe, Shep-

hard, Coffey, Harris, Catton, Kress, Curtiss, Pope, and General Counsel Peart.

Absent—Doctors Peers and Rogers.

1. **Call to Order**—The meeting was called to order by the chairman, Morton R. Gibbons.

2. **Minutes of the Council**—On motion of Phillips, seconded by Kelly, it was

Resolved, That the minutes of the 167th, 168th, 169th, and 170th meetings of the Council, as mailed to each member thereof, be approved.

3. **Minutes of the Executive Committee**—On motion of Phillips, seconded by Bingaman, it was

Resolved, That the minutes of the 99th, 100th, and 101st meetings of the Executive Committee, as mailed to each councilor, be approved.

4. **Date of Annual Meeting**—The secretary advised that the Executive Committee had tentatively fixed the date of the annual meeting as April 30 to May 3, 1928, inclusive.

Action by the Council—On motion of DeLappe, seconded by Hamlin, it was

Resolved, That the date of the annual meeting at Sacramento be fixed as April 30 to May 3, 1928, inclusive.

5. **Industrial Medical Survey Committee**—Dr. Gayle Moseley, chairman of the Industrial Medical Survey Committee, addressed the Council on the work of his committee, and presented examples of several different types of industrial and contract practice which were being investigated.

Action by the Council—On motion of Kress, seconded by Duffield, it was

Resolved, That an allowance of $100 be made the Industrial Medical Survey Committee to be expended on the approval of its chairman.

Doctor Phillips stated that he believed most of this work could be done through the secretary's office, and that Doctor Moseley's request for Association letterheads giving the names of the committee, etc., should be granted. Doctor Moseley stated that all reports of his committee would be submitted to the Council for approval before distribution elsewhere.

With the consent of the makers of the previous resolution, on motion of Catton, seconded by Kress, it was

Resolved, That stationery giving the membership of the committee, in such form as the general counsel shall suggest, be furnished the Industrial Medical Survey Committee; and that the chairman of the committee be given a petty fund of $100.

6. **Health Associations**—Correspondence regarding the various health and hospital associations was presented. In discussing the situation in San Joaquin County regarding the ethics of doctors employed by health associations, it was the sense of the Council that this was primarily a county society matter.

Action by the Council—On motion of DeLappe, seconded by Curtiss, it was

Resolved, That the file on health and hospital associations be referred to the Industrial Medical Survey Committee for investigation and report.

7. **Committee on Group Insurance**—Letter from Henry W. Gibbons, member of the committee appointed by the Council to investigate the feasibility of furnishing group insurance to members of the California Medical Association, was read. Dr. Henry W. Gibbons pointed out that the plan was not only legally impossible for such a group as the California Medical Association, but was also impracticable. Dr. Walter B. Coffey then discussed the plan.

Action by the Council—On motion of Phillips, seconded by Kiger, it was

Resolved, That the committee be continued.

8. **Program Committee**—Letter from Dr. Joseph Catton submitting his resignation as a member of the Program Committee, was read.

Action by the Council—On motion of Phillips, seconded by Kiger, it was

Resolved, That the resignation of Dr. Joseph Catton as a member of the Program Committee be accepted.

Discussion was then had as to the appointment of a new member to fill the unexpired term of Doctor Catton.

Action by the Council—On motion of Kelly, seconded by Kiger, it was

Resolved, That Doctor Leo Eloesser be appointed a member of the Program Committee to fill the unexpired term of Doctor Catton.

The question of holding a meeting of the section secretaries and Program Committee similar to that held prior to the 1927 annual session was discussed, and the advantages of such a meeting pointed out.

Action by the Council—On motion of Duffield, seconded by Catton, it was

Resolved, That a meeting of the section officers and Program Committee be held at Santa Barbara prior to the 1928 annual session and that the expenses be handled in the same manner as for the 1927 meeting.

9. **Walter Reed Memorial Committee**—William H. Kiger, chairman of the Committee on the Walter Reed Memorial, presented a report for his committee on the amount of collections and stated that there were several committeemen from whom no report had been received.

Action by the Council—On motion of Harris, seconded by Phillips, it was

Resolved, That the report be accepted and the committee continued.

It was felt that it would be well to publish a notice in the journal regarding the work of the committee.

10. **Medical Practice Act**—Dr. George H. Kress, chairman of the Medical Practice Act Committee, submitted a report for his committee on the desirability of the adoption by California of a basic science law.

Action by the Council—On motion of Harris, seconded by Kiger, it was

Resolved, That the report be accepted and the committee be continued.

11. **Technical Specialties Committee**—The secretary informed the Council that Dr. Edward N. Ewer, chairman of the Technical Specialties Committee, had advised that the present committee was so widespread as to be practically unworkable. The secretary advised that the question of technical specialties was at present in the hands of the Medical Activities Committee. Dr. Lyell Kinney, member of the Medical Activities Committee, stated that he was sure Doctor Graves, chairman of the committee, would be glad to be relieved of the technical specialties problem.

Action by the Council—On motion of Kelly, duly seconded, it was

Resolved, That the committee in its present form be dissolved, but that a similar committee consisting of William B. Bowman, chairman; William Duffield and John H. Graves, be appointed.

12. **Instructing Delegates to the American Medical Association**—Dr. Oliver D. Hamlin advised that the committee had not yet worked out a plan for instructing delegates to the American Medical Association, and requested that the committee be continued.

Action by the Council—On motion of Phillips, seconded by Catton, it was

Resolved, That the committee on instructing delegates to the American Medical Association be continued.

13. **Constitution and By-Laws**—Dr. Joseph Catton suggested that the report of the Special Committee on the Revision of the Constitution and By-Laws be accepted as the final report and that the Council take some definite action at this time on the Constitution so that the next meeting might be devoted to discussion of the by-laws.

Doctor Kress stated that it was the desire of the Special Committee to be allowed to submit a report at the spring meeting which would be in such form as to permit action by the Council. If this additional time were allowed it would permit the committee to work over all drafts and present final suggestions. Doctor Kress then requested on behalf of the committee that it be permitted to submit such a report.

Mr. Peart stated that there were serveral points upon which he might be able to give assistance if dis-

cussed at this time, such as, membership, proposed election of district councilors by districts, speaker and vice-speaker, etc. Discussion was then had as to classes of members.

Action by the Council—On motion of Phillips, seconded by Kelly, it was

Resolved, That there be three classes of members; that the Special Committee with Mr. Peart's assistance work out these classes in order to present active, affiliate and honorary members.

Doctor Kress then stated that a final composite could be worked out with the assistance of Mr. Peart and the subchairmen of the Committee on Revision and submitted to all councilors before the spring meeting so that at that time definite action could be taken.

Action by the Council—On motion of Phillips, duly seconded, it was

Resolved, That the committee be continued and a report be submitted at the spring meeting of the Council.

Action by the Council—On motion of Catton, duly seconded, it was

Resolved, That the present constitution as drawn up by Doctor Kress' committee, with such corrections as Mr. Peart now has, adequately serves this Association, and that it be put in shape by the general counsel.

Action by the Council—On motion of Duffield, duly seconded, it was

Resolved, That action on the Constitution be deferred.

A vote on the question was then taken, and deferred action was sustained. Doctors Catton and Shephard voting No.

14. **Annual Conference of Secretaries**—Letter from Doctor Kress regarding the Annual Conference of Secretaries of Constituent State Societies was read.

Action by the Council—On motion of Phillips, seconded by Kelly, it was

Resolved, That the secretary and the editors attend the annual conference of Secretaries of Constituent State Societies at Chicago, November 19 and 20.

15. **Rates for Advertising**—The secretary explained the present situation regarding advertising rates in California and Western Medicine, and presented a letter from the Cooperative Advertising Bureau of the American Medical Association.

Action by the Council—On motion of Phillips, seconded by Catton, it was

Resolved, That the matter of increasing rates for advertising be left to a committee consisting of Doctors Kress and Pope and Mr. Peart, with power to act.

16. **Exhibits at Annual Meeting**—The secretary advised that she was desirous of having a ruling on the length of time an advertisement must run before carrying the privilege of exhibition at the annual meeting.

Action by the Council—On motion of Phillips, seconded by DeLappe, it was

Resolved, That none but regular advertisers be allowed to exhibit at any annual meeting and that the term "regular advertiser" shall be construed to mean one who has carried an advertisement in California and Western Medicine for at least three months prior to the annual meeting.

17. **State Board of Medical Examiners and State Board of Health Columns**—Doctor Kress stated that he believed much of the personal data included in the Board of Medical Examiners column in the journal might well be eliminated. Doctor Phillips advised that he was at present editing the news items before publication and that, with the assistance of Doctor Pinkham, he believed the column would contain only news items of general interest. Doctor Phillips then pointed out that the work of the State Board of Health was important and that this board should be granted the same privilege as the Board of Medical Examiners in publishing items in California and Western Medicine.

It was the sense of the Council that the California State Board of Health be invited to submit news items for inclusion in California and Western Medicine.

18. **Handling the Insane in California** — Doctor Catton explained the present method of handling insane in California and stated that in his opinion the situation was not urgent.

Action by the Council—On motion of Kress, seconded by DeLappe, it was

Resolved, That the correspondence on handling the insane in California be referred to a committee consisting of Doctors Catton and Shoemaker and Mr. Peart, for study and report to the Executive Committee.

19. **Private Hospital**—Letter from Dr. E. V. Falk regarding a private hospital at Modesto was presented. It was the sense of the Council that the letter be referred to the Stanislaus County Medical Society.

20. **Welfare Committee**—The secretary presented a report from Martha Welpton, chairman of the Welfare Committee. No action taken. Doctor Welpton's request for stationery was then discussed and referred to the Executive Committee.

21. A case of alleged negligence on the part of a member was presented and details thereof discussed.

22. **Arrangements Committee**—Dr. Junius B. Harris, chairman of the Arrangements Committee reported on the progress of arrangements for the annual meeting. Doctor Harris stated that housing and entertainment features had been studied and at present they were selecting speakers for the various meetings.

23. **Date of Council Meeting**—Discussion was had on the date of the spring meeting of the Council. It was pointed out that more than one day might be needed for discussion of the Constitution.

Action by the Council—On motion of Kress, seconded by Kinney, it was

Resolved, That the spring meeting of the Council be held at San Francisco on Friday, January 20, 1928.

24. **Twenty-Five Years Ago Today Column**—Dr. George H. Kress presented a column entitled "Twenty-Five Years Ago Today," which he desired to have approved for inclusion in the journal. It was the sense of the Council that the column be approved.

25. **Clarendon Foster**—Doctor Kress stated that Dr. Clarendon Foster had been in touch with him relative to his request for admission to membership in the Association.

Action by the Council—On motion of Phillips, seconded by Harris, it was

Resolved, That the Council refuse to act.

26. **Adjournment**—There being no further business, the meeting adjourned.

Minutes of the One Hundred and Seventy-Second Meeting of the Council of the California Medical Association

Approved at the One Hundred and Seventy-Third Meeting of the Council

Held in the English Room, Palace Hotel, San Francisco, Friday, January 20, 1928, at 10 a. m.

Present—Doctors Phillips, Gibbons, Kiger, Kelly, Hamlin, Kinney, Duffield, Bingaman, Shephard, Harris, Rogers, Peers, Kress, Curtiss, Pope, and General Counsel Peart.

Absent—Doctors DeLappe, Coffey, Catton, and Shoemaker.

Invited—Doctor McArthur.

1. **Roll Call**—The meeting was called to order by the chairman, Morton R. Gibbons.

2. **Minutes of the Council**—On motion of Phillips, seconded by Kiger, it was

Resolved, That the minutes of the one hundred and seventy-first meeting of the Council as mailed to all councilors, be approved.

3. **Minutes of the Executive Committee**—On motion of Phillips, seconded by Kelly, it was

Resolved, That the minutes of the one hundred and second and one hundred and third meetings of the Executive Committee as mailed to all councilors, be approved.

4. **Committee on Arrangements**—Junius B. Harris, chairman of the Committee on Arrangements, stated that preparations for the annual meeting were progressing nicely. Doctor Harris stated that with the assistance of Doctor Pope section meetings and commercial and scientific exhibit space had been cared for. Although the Arrangements Committee is experiencing some difficulty in obtaining speakers for general sessions at the annual meeting, it was anticipated that definite speakers would be named by the date of the program meeting on January 29. The committee had not yet reached a decision as to the matter of holding clinics at various hospitals.

It was the sense of the Council that the progress report of the Arrangements Committee be accepted.

5. **Industrial Medical Survey Committee**—The secretary stated that Dr. Gayle Moseley, chairman of the Committee on Industrial Medicine, had reported that he had sent out letters requesting information on industrial medical problems and was at present awaiting replies; and that a report would be submitted at the annual meeting.

6. **Medical Activities Committee**—The secretary advised that Dr. John H. Graves, chairman of the Medical Activities Committee, reported progress in his work.

7. **History of the C. M. A.**—Excerpt from a letter from Doctor Kress, member of the Committee on the History of the California Medical Association, was read. Doctor Kress stated that at present data on the history of the Association was very limited. It was felt that it would be well to circularize county societies and older members of the profession to obtain important historical data and in an endeavor to secure the volumes covering transactions during the years 1902 and 1903.

On motion of Phillips, seconded by Duffield, it was

Resolved, That the present Committee on the History of the California Medical Association during its existence be empowered to use not to exceed $100 in the pursuit of the work of the committee.

8. **Clinical Prize Committee**—The report of George Dock, chairman of the Committee on Clinical Prizes, was read. It was the sense of the Council that the report be accepted.

9. **Medical Practice Act**—George H. Kress, chairman of the Committee on the Medical Practice Act. presented the report of his committee, in which detailed information was given on the new Professional Standards Committee and the Basic Science Law, stating that members of the medical profession would be under the jurisdiction of this Professional Standards Committee.

Doctor Kress stated that the committee would submit a further report at the annual meeting so that the Council could decide whether or not this matter should be placed before the House of Delegates.

Action by the Council—On motion of Phillips, seconded by Kelly, it was

Resolved, That the report of the Committee on the Medical Practice Act be accepted.

Doctor Phillips commended the committee on the excellence of the report as submitted.

10. **Investment of C. M. A. Funds**—Doctor Phillips, chairman of the Committee on Investment of Funds of the California Medical Association, stated that at present high-class bonds were paying little in excess of 4¼ per cent, which is being paid by banks for savings accounts, which offer the highest type of security. Doctor Phillips stated that he therefore believed it was inadvisable to withdraw the funds from the savings accounts.

Action by the Council—On motion of Kinney, seconded by Harris, it was

Resolved, That the report of the Committee on Investment of the Funds of the California Medical Association be adopted.

11. **Circulation of California and Western Medicine**—The question of limiting the circulation of CALIFORNIA AND WESTERN MEDICINE was brought up. The general attorney advised that the greatest advantage would be the limiting of the circulation to ethical physicians and surgeons, and thus giving authors greater latitude in the preparation of papers. The desirability of keeping before the lay public was pointed out.

Action by the Council—On motion of Phillips, seconded by Harris, it was

Resolved, That action on the question of limiting the circulation of CALIFORNIA AND WESTERN MEDICINE to physicians and surgeons only, be deferred.

12. **San Diego County Society**—Telegram from the San Diego County Society as received by the secretary was reported to the Council. No action taken.

13. (See footnote.)

14. **Noon Adjournment**—At this point the meeting adjourned for lunch until 1:15 p. m.

15. **Call to Order**—The meeting was called to order by the chairman, Morton R. Gibbons.

16. (See footnote.)

17. **William T. McArthur**—Action by the Council—On motion of Phillips, seconded by Harris, it was

Resolved, That Dr. William T. McArthur be given the privilege of the floor of the Council.

18. **San Joaquin County Society**—Letters and appeals of Drs. Ernest C. Griner and C. V. Thompson from action of the San Joaquin County Society in suspending them from membership was read. It was the sense of the Council that the chairman appoint a committee of three to act in cooperation with the general attorney to arrange for the hearing of the appeals, and that the secretary write the secretary of the San Joaquin County Society, and obtain copies of all the official records of the society in the matter; that the committee arrange for a time to hear the appeals at one of the Council meetings to be held at the time of the annual meeting at Sacramento, and that Doctors Griner and Thompson and the officers of the society be duly notified of the time and place of hearing.

19. A case of alleged negligence on the part of a member of the profession was presented and details thereof discussed.

20. A case of alleged negligence on the part of a member was presented and details thereof discussed.

21. **Dr. F. E. Morgan**—Letter from Dr. F. E. Morgan regarding office space in the new Four Fifty Sutter Building was presented and referred to the Auditing Committee for report to the Executive Committee.

22. **Cooperative Advertising**—The attention of the Council was called to the fact that some advertisers for renewal contracts considered changing from direct accounts to cooperative accounts and in two instances the secretary felt this was due to solicitation by the Cooperative Advertising Bureau of the American Medical Association.

Action by the Council—On motion duly made and seconded, it was

Resolved, That the Council of the California Medical Association appreciates the very fine work done by the Cooperative Advertising Bureau in securing advertising for the state journals, but believes that the interest of each state journal is best served when advertisers under contract with any state journal are not solicited for further or different advertising in that journal through the national Cooperative Bureau.

23. **Orange County Society**—Letter from Harlan Shoemaker, chairman of the Legislative Committee, attaching resolution of the Orange County Medical Society regarding an infectious eye disease in that county was read.

Action by the Council—On motion of Phillips, seconded by Kelly, it was

Resolved, That the secretary communicate with the State Board of Health presenting such information as is at hand.

24. **Physicians' Income Tax Deductions**—Letter from Doctor MacGowan reporting on the status of the Committee on Lay Medical Corporations and the

Physicians' Income Tax Deductions was read. Doctor MacGowan stated that the action on the Physicians' Income Tax Deductions would probably entail actual appearance at Washington and requested that his resignation from this committee be accepted.

Action by the Council—On motion of Kress, seconded by Hamlin, it was

Resolved, That the resignation of Granville MacGowan be accepted and that the question of physicians' income tax deductions be referred to the Legislative Committee.

25. **Bureau of Child Hygiene**—Letter from Dr. Ellen Stadtmuller regarding survey on the cause of maternal deaths was presented, and discussed by members of the Council.

Action by the Council—On motion of Phillips, seconded by Harris, it was

Resolved, That Dr. Ellen Stadtmuller be invited to attend the next executive meeting and discuss the plans of the Bureau.

26. **Herzstein Bequest**—The general counsel read the excerpt from the will of Dr. Morris Herzstein wherein the California Medical Association is to receive the income from a $20,000 trust fund for use in the suppression of quackery.

27. **Constitution and By-Laws**—George H. Kress, chairman of the special Committee on Revision of the Constitution and By-Laws, presented galley-proof copy of the Constitution and By-Laws as amended by his committee. General Counsel Peart also presented a mimeograph form of constitution and by-laws as prepared by him embodying suggestions of various councilors and members.

Action by the Council—On motion of Phillips, seconded by Hamlin, it was

Resolved, That the present Committee on Revision of the Constitution and By-Laws be discharged with the thanks of the Council for the great amount of work done in assisting in the revision of the Constitution and By-Laws; that the matter of revision of the Constitution and By-Laws be referred to Doctor Kress and Mr. Peart for report to the Council at a later meeting.

A ten-minute recess was then called to permit Doctor Kress and Mr. Peart to examine the two types of Constitution and By-Laws and make suggestions.

At the suggestion of the Chair, Doctor Kress presented a number of important points which Mr. Peart and he had discussed. It was felt that with the suggestions offered by the Council, Doctor Kress and Mr. Peart could work up a final revision for submission at a later meeting of the Council.

Doctor Kress then reported on the following matters as discussed by Mr. Peart and him:

Doctor Kress stated that Mr. Peart and he were agreed that the final draft of the Constitution and By-Laws should be cross-indexed; that there should be a speaker and vice-speaker of the House of Delegates; that the language governing alternate delegates should be very explicit; that the president-elect should be elected for three years, namely, one year as president-elect, one year as president, and one year as retiring president, during which he shall serve ex-officio as a member of the Council; that the article of incorporation as prepared by Mr. Peart was satisfactory; and that there should be certain standing committees.

Doctor Kress and Mr. Peart did not agree on the question of larger representation for the small counties. They also differed on the question of whether men recently graduated from college should receive the benefit of smaller dues; whether the secretary and editor should be prohibited from engaging in the practice of medicine while in office; whether district councilors should be elected by the entire House of Delegates or by the delegates from the district in which they are to serve, only; and whether the main office should be fixed in the Constitution at San Francisco.

The Council then discussed the various questions and took the following action:

On motion of Peers, seconded by Hamlin, it was

Resolved, That since both Mr. Peart and Doctor Kress are agreed on the advisability of a speaker and vice-speaker, it be recommended for inclusion in the Constitution and By-Laws.

On motion of Duffield, seconded by Kiger it was

Resolved, That since there is a difference of opinion on the matter of larger representation for the small counties, the Council make no recommendation on this point.

The Council felt that a clause should be added that in the event of a county unit not having a delegate or alternate present at the meeting of the House of Delegates, the House could appoint one; that the president-elect should serve for a term of three years during which time he would be ex-officio a member of the Council and that during the third year he should serve as "retiring president"; and that provisions should be made for a vice-chairman of the Council.

On motion of Kinney, seconded by Harris, it was

Resolved, That the dues of the Association be uniform for all members.

On motion of Kress, seconded by Duffield, it was

Resolved, That the matter of locating the main office at San Francisco be left on the table for discussion at the Houses of Delegates meeting at Sacramento.

The Council agreed that the amendment on incorporation was satisfactory; that there should be standing committees, the number to be determined later; that the president-elect should not give an address at the annual meeting; that the Executive Committee should submit a preliminary draft of the annual budget to the Council each year; that a preconvention bulletin should be issued to contain information for members of the House of Delegates.

In discussing transfers from one county to another, it was stated that members should request transfer within one year and if refused admittance in the new county, might retain their membership in the original county.

Action by the Council: On motion of Duffield, duly seconded, it was

Resolved, That the proposed revised Constitution and By-Laws be prepared in ample time so that each delegate and alternate may have a copy at least two weeks prior to the annual meeting.

Action by the Council—On motion of Hamlin, seconded by Duffield, it was

Resolved, That a special meeting of the Council be held at the Palace Hotel, San Francisco, on Saturday, March 24, 1928, for consideration of the proposed Constitution and By-Laws.

It was decided that immediately after the present meeting copies of the committee report as submitted by Doctor Kress, Mr. Peart's draft and all amendments as presented in printed form at the last meeting of the House of Delegates be sent to all county secretaries.

28. **Adjournment**—There being no further business the meeting adjourned.

Footnote: Items Nos. 13 and 16 refer to the matter of the proposed gift of Mrs. W. E. Musgrave and publication will be made in due time.

Daily tests of the tolerance for dextrose were made on rabbits in which toxemias had been produced with diphtheria toxin. Two units of insulin were injected daily fifteen minutes after the administration of dextrose. The toxemia appeared to have little, if any, effect on the injected insulin. On the basis of these and preceding experiments, it is suggested that the effect of toxemia is that of a suppression of endogenous production of insulin.—*Arch. of Int. Med.*

UTAH STATE MEDICAL ASSOCIATION

W. R. CALDERWOOD, Salt Lake.....President
E. H. SMITH, Ogden.....President-Elect
FRANK B. STEELE, Salt Lake.....Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....
.....Associate Editor for Utah

NEWS

Prominent Salt Lake Physician Dies—Dr. Elias Smith Wright, physician in Salt Lake for thirty-five years and former member of the Utah State Medical Association, died at his home, 321 First Avenue, Tuesday of heart trouble. He was born July 23, 1860, in Brigham City. He received his medical education at the New York University. He always was active in the medical associations, having served as president of the Salt Lake County and state medical associations.

He was Surgeon-General for the Utah National Guard under Governor William Spry and served as Salt Lake County physician. He was active in the affairs of the Sons of the American Revolution and served as president of the Utah chapter in 1925.

Surviving him are his widow, Mrs. Elizabeth R. Wright, and the following sons and daughters: Dr. Spencer Wright, Mrs. Geneva W. Richards, Helen and Afton Wright of Salt Lake. The following brothers and sisters also survive: Reuben Brigham, Lee and Edward Wright, Mrs. A. E. Snow of Detroit, and Mrs. T. M. Evans of Brigham City.

Funeral services were held in the Twentieth Ward Chapel, and interment was in the City cemetery.

The outstanding social function of the medical world in Salt Lake City during the past month was the supper dance given by the ladies of the Woman's Auxiliary at the Newhouse Hotel the evening of February 23.

The officers and ladies of the Salt Lake County Medical Society and the officers of the Auxiliary received the one hundred and fifty guests who attended both from the city and surrounding towns.

Dancing was the main event of the evening, with delightful music furnished by the "Arcadians" orchestra.

Card tables were provided for those who did not desire to dance.

Supper was served in the Rose Room, with an attractive menu of sandwiches, salads, pickles, coffee, ice cream and cake.

Dancing continued until midnight.

This is the second annual dance of this type which the Auxiliary has given, and it is now planned to make it an annual event.

Mrs. Claude L. Shields announced that there would beck, and Mrs. Vivian White were in charge.

As a part of the nation-wide campaign of the National Tuberculosis Association, a program was held by the local Tent of the Maccabees at their clubrooms on the evening of March 16.

Officers of the National Tuberculosis Association were present and lectured on the early recognition of the disease, illustrating their lecture with motion-picture films.

This is a part of the national compaign being carried on by the association during March.

The Holy Cross Hospital Clinical Association held its regular meeting in the lecture room of the hospital February 20, 1928, at 8 p. m.

Program as follows:

Actinomycosis of the Jaw (Case Report)—S. H. Besley.

Hyperglycemia and Hypoglycemia (Case Report)—J. W. Sugden.

Case of atypical appendicitis with discussion of operative technique—W. T. Ward.

Case report for diagnosis—E. W. Thielen.

Have you paid your dues?

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held in the Assembly Room of the Medical Arts Building, Salt Lake City, on Monday, February 13.

Meeting was called to order by President William F. Beer. Thirty-seven members and five visitors were present.

Minutes of the previous meeting were read and accepted without correction.

G. N. Curtis presented a fetus of a woman who had had a missed abortion. Films of this patient were shown by L. A. Thody.

A. J. Ridges read an extremely interesting paper on "Mastoiditis" giving the complete history of two patients with this condition followed by severe complications. The anatomy, pathology and treatment were thoroughly discussed. This paper was discussed by F. Leaver Stauffer, I. A. E. Lyons, E. M. Neher, L. C. Snow, and F. H. Raley.

Mrs. Claude L. Shields announced that there would be a dinner dance on February 23, 1928, at the Newhouse Hotel sponsored by the Ladies' Auxiliary Medical Society. Discussed by William F. Beer and E. M. Neher, who moved that a committee of three be appointed, of which committee President Beer should be chairman, to confer with the Ladies' Auxiliary on important questions that might come up.

Applications for membership signed by D. A. McGregor, J. Edwin Scobee, Mary F. Montgomery, and Charles Ruggeri, were referred to the Board of Censors.

A letter from J. U. Giesy was read. This letter outlined the program of the Narcotic Education Week to be held the last week of this month. The following resolution was adopted by the society:

Whereas, Narcotic drug addiction has become a major problem for all mankind, menacing the foundations of civilization and the future of the race, therefore be it

Resolved, That we recommend to our constituencies hearty cooperation with the World Conference on Narcotic Education in the observance of Narcotic Education Week, the last week in February, 1928, and with the World Narcotic Defense Association in its efforts to organize the vital forces of society everywhere to bring to humanity relief, safety and ultimate immunity from this spreading menace.

President Beer announced that the City Commission was contemplating taxing the physicians of Salt Lake City.

G. N. Curtis invited all physicians to be present at the Holy Cross clinical meeting and announced the program.

G. A. Cochran moved that the society go on record as favoring an ordinance providing for the pasteurization of milk and make it compulsory for restaurants, soda fountains, etc., to serve milk in the original bottles. This motion was seconded. Discussed by G. G. Richards, who moved that it be amended to provide that a committee be appointed to interview the Health Commissioners as to the present condition. Seconded and carried.

Adjournment at 9:20 p. m.

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The regular meeting of the Salt Lake County Medical Society was held in the Assembly Room of the

Medical Arts Building, Salt Lake City, Monday, February 27.

Meeting was called to order at 8:10 p. m. by President William F. Beer. Fourty-four members were present.

Minutes of the previous meeting were read and accepted without correction.

F. K. Root presented a specimen of cancer of the uterus, outlining the history. Discussed by F. K. Root, H. S. Scott, and E. L. Skidmore.

The following delegates to the Utah State Medical Association were elected: W. L. Rich, L. J. Paul, S. C. Baldwin, M. M. Critchlow, H. P. Kertly, A. C. Callister, Roy Groesbeck, E. F. Root, Leland Cowan, E. M. Neher, and F. L. Peterson.

The following members were elected alternates: L. E. Viko, S. G. Kahn, M. M. Nielson, R. R. Hampton, Helmina Jeidell, and C. L. Shields.

William T. Ward reported for his committee to investigate charity institutions and recommended that the emergency hospital be discontinued providing a proper substitute could be instituted. His report was adopted by the society.

M. M. Nielson read a report recommending that the society endorse an ordinance whereby the city milk supply might be protected. This report was adopted after discussion by Roy Groesbeck, H. S. Scott, G. H. Pack, S. G. Kahn, and F. B. Steele.

L. E. Viko announced the suggested program for the early tuberculosis diagnosis campaign to be conducted throughout this state in March. F. B. Steele moved that it be received and filed. Seconded and carried.

F. A. Goeltz moved that the state society and council be asked for a ruling regarding men from distant counties belonging to the Salt Lake County Medical Society. Discussed by E. M. Neher and E. F. Root. Carried.

Adjournment at 10 p. m.

M. M. Critchlow, *Secretary.*

UTAH COUNTY

February 22, the Utah County Medical Society met at the Hotel Roberts, Provo., at 7 p. m.

Dinner is a pleasant customary preliminary to the scientific program of the regular meetings of the Utah County Medical Society.

Dr. S. W. Oaks read a paper on "Headache in the Practice of Medicine." This paper was little short of classic in its handling of a subject too seldom considered in a scientific way.

Dr. R. G. Clark gave a paper on the "X-ray Treatment of Uterine Bleeding."

This paper also brought out a great many interesting points.

Following a short business session the meeting adjourned.

Arnold Robison, *Secretary.*

WEBER COUNTY

The regular meeting of the Weber County Medical Society was held February 23, at the Hotel Bigelow, President W. R. Brown presiding.

Dr. E. P. Mills gave the report of the auditing committee on the treasurer's statement for the last two years. The report was accepted as read. The committee suggested that vouchers be used in the future. A motion by Dr. E. P. Mills that the medical journals continue to come to the society, and that they be sent to Dr. R. L. Draper, was seconded and passed.

The minutes of the previous meeting were read and approved. Dr. A. H. Aland reported that only four or five of the doctors had so far sent in the list of "dead-beats." Dr. L. S. Merrill gave a review of the lecture course being given in Ogden by the University of Utah, and encouraged new members to join this course.

Dr. Eugene Smith reported on an epidemic of erythrema infectiosum at the Polk School. The paper for the meeting was given by Dr. M. J. Seidner "On the Diagnosis of Early Pulmonary Tuberculosis." Numerous case histories and x-ray films were shown. Drs. J. R. Morrell and Eugene Smith opened the discussion.

Meeting adjourned.

G. M. Fister, *Secretary.*

Yale Becomes Practically an Honor School—A new curriculum has been adopted at Yale University School of Medicine, New Haven, which gives the student liberty in accordance with his ability and makes the institution practically an honor school. The dean, Dr. Milton C. Winternitz, says that for years an objective of the faculty has been to discriminate less between the prospective student candidates for the degree of doctor of medicine and that of doctor of philosophy in various biologic sciences. Without reducing the number, he believes, this procedure will produce better trained physicians and contribute to the movement in preventive medicine. There are several hundred students in the Graduate School of Yale University devoting themselves to one or another branch of biology with the idea of becoming teachers and investigators. As time has gone on they not infrequently have concluded, after one or more years of training in some field of biology, to prepare themselves for the practice of medicine and, to allow this interchange, a greater elasticity between the graduate school and the school of medicine has developed. The Yale school of medicine occupies a unique position in this regard, as no line of cleavage for the university departments occurs, irrespective of the schools they serve. Candidates for a doctor of philosophy and those for a doctor of medicine find themselves in the same building and taught by the same instructors. Experience, the dean continues, has indicated the inadvisability of inelastic stratification of the curriculum for men of this type, so the medical school has introduced the same liberal educational policies for candidates for a doctor of medicine as were introduced years ago in the graduate school for candidates for a doctor of philosophy. The school of medicine now prefers to admit students primarily on account of their interest in the biologic sciences rather than on a preconceived idea of becoming doctors of medicine. The student selects the courses in biology which he desires to pursue and for which the instructor considers he is prepared. Later he concludes whether he will make a more successful doctor of philosophy or a doctor of medicine, and then presents himself for qualification. This is the first examination required of him, and it may be in less than a year and a half after admission to the school or twice as long. Students are not grouped by classes. The student, during the preliminary period, regards his instructor as a coworker. After the completion of the first test and having determined on his career, he proceeds further with his education according to the same liberal principle and appears again for examination before graduation, after having completed the fundamental courses and having had his thesis accepted. The fundamental courses at Yale have been reduced to a minimum. The student has practically half his time for elective study; he is not taught, but assisted in acquiring knowledge. The class rooms are in many instances designed so that the student is considered practically a member of the staff. A fundamental point of this system is the complete liberty of the student to acquire the knowledge he requires for the completion of his qualification examination or graduation. If he feels a subject may be pursued more efficiently at another institution, at home or abroad, it is his privilege to take advantage of his conclusion, for all that is required of him is the demonstration of knowledge in the subject; grades and hours of work are not even recorded in the administrative office.—***Jour. A. M. A.***

MISCELLANY

From time to time in this department of California and Western Medicine, appear columns grouped under the following headings: Comment on Current and Recent Articles in this Journal; News; Medical Economics; Readers' Forum; California State Board of Health; and California Board of Medical Examiners. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

San Jose Medico-Dental Building—The Medico-Dental Building of San Jose has just been completed and invitations have been issued to an informal opening on Saturday, April 7, 1928, from 4 to 10 o'clock, Santa Clara and Sixth streets, San Jose.

The structure is a splendid example of the new American architecture, and typifies a harmonious and progressive spirit among the physicians of San Jose.

The Leslie Dana Medal—The fourth award of the Leslie Dana Medal, presented annually through the Missouri Association for the Blind to the person selected from the nominations received by the National Society for the Prevention of Blindness, will take place during the 1928 meeting of the American Academy of Ophthalmology and Otolaryngology in St. Louis, Missouri.

Nominations will be received by the National Society for the Prevention of Blindness, together with detailed information prompting the nomination, until the fifteenth day of May, 1928. The medical profession and ophthalmological societies are invited to submit names of persons deemed worthy of this honor to the National Society, under the conditions set forth in the deed of gift, as follows:

(*a*) Long meritorious service for the conservation of vision in the prevention and cure of diseases dangerous to eyesight.

(*b*) Research and instructions in ophthalmology and allied subjects.

(*c*) Social service for the control of eye diseases.

(*d*) Special discoveries in the domain of general science or medicine of exceptional importance in conservation of vision.

The recipient of the first medal awarded (1925) was Dr. Edward Jackson of Denver. The second annual award (1926) was to the late Miss Louisa Lee Schuyler of New York City, and the third award (1927) was to Dr. Lucien Howe, until recently of Buffalo, now of Cambridge.

Special Summer Postgraduate Course—The Stanford University Medical School offers a special summer course for graduates of medicine to be given between Monday, July 2, and Saturday, July 14, 1928. This course will consist of a series of forty lectures and demonstrations covering various fields of medicine, surgery, obstetrics, pathology and pharmacology in their clinical aspects. Four sessions will be held on each week-day, excepting Saturday on which there will be two. Opportunities will be given for discussion of problems and for examination of specimens. In general, the purpose of the course is to review, from the practical standpoint, the more important advances in clinical medicine which have been made during recent years. The course may be regarded as complementary with that of the University of California, which ends on Saturday, June 30, so that practitioners so desiring may find it profitable to take both courses.

A detailed program will be sent on request to anyone interested on application to the Dean, Stanford University Medical School, 2398 Sacramento Street, San Francisco.

Lectures by Dr. Richard P. Strong—The third course of two lectures under the Morris Herzstein Lectureship on Diseases of the Pacific Basin Including Tropical Diseases will be given by Dr. Richard P. Strong, professor of tropical medicine of the Harvard Medical School, on the evenings of Wednesday, May 2, and Thursday, May 3, at 8 p. m. at Lane Hall, Stanford Medical School, Sacramento near Webster streets, San Francisco. The title of Doctor Strong's lectures will be "Recent Advances in Tropical Medicine."

The medical profession and all medical students are cordially invited to attend these lectures.

Reunion, Class of 1908, Cooper Medical College—The twentieth anniversary of the graduation class of 1908, Cooper Medical College, will be celebrated by a special dinner at Hotel Senator at 6 p. m., Wednesday, May 2. The annual state society meeting should see all members assembled in Sacramento. With practically the whole of the 1908 class in central California, there should be a full attendance.

Members are requested to reply to G. H. Taubles, 323 Geary Street, San Francisco, and signify their intention of being present. Informal dress.

New Officers of the Pacific Coast Surgical Association—The following were elected 1928 officers for the Pacific Coast Surgical Association: Andrew S. Lobingier, M. D., Los Angeles, president; George W. Swift, M. D., Seattle, first vice-president; A. A. Mathews, M. D., Spokane, second vice-president; Edgar L. Gilcreest, M. D., San Francisco, secretary. Thomas O. Burger, M. D., San Diego; Harold Brunn, M. D., and Philip G. Gilman, M. D., San Francisco; J. Tate Mason, M. D., Seattle; and Robert C. Coffey, M. D., Portland, members of the Board of Counselors.

California Association of Medical Social Workers—The seventh annual meeting of the California Association of Medical Social Workers will be held in Room D of the Sacramento Auditorium, Tuesday, May 1, 1928, 2 to 4:30 p. m.

Program:

Medical Social Service in Relation to Orthopedics—Steele Stewart, M. D., Los Angeles.

What is the Medical Social Worker and Why?—Marguerite L. Spiers, superintendent Berkeley Health Center. Discussion: R. G. Broderick, superintendent Stanford University Hospital.

Social Work in Relation to the Hospital and Out-Patient Department—Medical Social Worker from Los Angeles.

Social Worker or Eligibility Clerk—W. P. Sheppard, Welfare Division, Metropolitan Life Insurance. Discussion: E. B. Shaw, M. D.; G. N. Hosford, M. D.; H. H. Johnson, M. D.; J. B. Cutter, M. D.; John Sampson, M. D., of San Francisco.

Summer Courses—Summer courses for graduates in medicine will be offered in the University of California Medical School, San Francisco, June 4 to June 30, 1928.

Various courses will be offered in general medicine, surgery, the specialties, and laboratory subjects. Correspondence is solicited from those who may be interested.

Address: Dean's Office, University of California Medical School, Parnassus and Third Avenues, San Francisco.

Rabies in San Francisco—Dr. William Hassler, health officer of San Francisco, calls the attention of

the medical fraternity to the prevalence of rabies in and about San Francisco.

At the present time there is great importance of giving especial study to the ailments of domestic animals, particularly dogs, since unfortunately for the first time in seventeen years rabies has appeared in this city.

To date there have been two cases of animal rabies, one which occurred in a dog that bit three persons so far as known; all of whom were given Pasteur treatment. This animal also bit several other dogs.

A second case was found March 23. It presented the typical symptoms, and after death the head was examined by the City Laboratory and Negri bodies found.

In view of the fact that about fifty cases have occurred in Marin County recently, and that San Francisco now has been infected, your most valuable assistance in the helping to detect and control this dangerous situation is besought.

The Fifth Postgraduate Course in Ophthalmology, Vienna, 1928—The fifth special course of postgraduate study in ophthalmology will be given between October 1 and December 4, 1928. This intensive postgraduate instruction was first originated in Vienna in 1922 as a result of the suggestion by Dr. Edward Jackson of Denver to Professor E. Fuchs. Information concerning the course may be had by writing to Dr. Adalbert Fuchs, Skodagasse 13, Vienna VIII, Austria.

Some Medical Discoveries of 1927—Never before in the history of the world have so many highly trained scientists devoted their full time to research. Ours is an age of cooperation in all fields of work and particularly is this so among scientists. An isolated discovery by a chemist or a physicist may give a lead to physiologists or to surgeons which, by reasoning and further experiment, may open an entirely new field in the cure and prevention of disease. The discoveries of modern medicine are no less wonderful than those of electricity. In most new achievements of science a period of development must ensue for the perfection of methods. It is often a far cry from the successful experiment upon animals in the laboratory to its utilization upon a human being and the utmost patience is often necessary while suffering humanity awaits its perfect application when such is possible.

The following are some of the notable discoveries in medicine made during 1927 as compiled by "Science Service." Here and there I have added an explanatory note [in brackets] for the benefit of those who may be unfamiliar with some of the words used.

1. The 1927 Nobel prize for medicine was awarded Professor Julius Wagner-Jauregg of Vienna for his treatment of paresis by inoculation with malaria. [Paresis: General paralysis. Caused in most cases by the germ of syphilis which Doctor Noguchi of the Rockefeller Institute years ago found in the brain of paralytics. This germ is highly sensitive to heat—even the fever temperature in malaria patients kills it or inhibits its activity. The malaria germ is afterward destroyed by quinin and the patient suffers no permanent effect from the treatment. In some insane asylums as many as 60 per cent of the patients who, without this treatment would be doomed to certain death, are definitely benefited or cured.]

2. Cancer in the chicken can be rendered inactive by small quantities of aluminum and calcium salts, according to Mrs. Margaret R. Lewis and Dr. Howard B. Andervont.

3. Scientists at Berlin have shown that it is possible to change simple embryonic tissues into malignant tissue by exposing the former in tissue cultures to the action of arsenic. [Dr. Alexis Carrel of the Rockefeller Institute discovered that the cells of body tissues—especially those from an embryo (unborn animal or bird) can be grown in proper culture media just as bacteria are. Tissues placed in this serum media years ago and transplanted occasionally to fresh media are still growing lustily. The tissue may be placed under the microscope and the division of cells followed, and the action of bacteria and chemicals upon these growing cells watched. Cancer is now being studied in this way because cancer in human beings is manifested by an excessive growth of embryonic cells which become malignant.]

4. A "heart hormone," or internal secretion that stimulates the heart to keep it beating, was discovered by Dr. Ludwig Haberlandt of the University of Innsbruck. [Hormones are chemical substances secreted usually by a gland and which are poured into the blood stream. They promote activity in some other organ or upon the body as a whole.]

5. Thyroxin, the hormone of the thyroid gland, was made synthetically in the laboratories of University College, London, by Dr. C. R. Harrington and Professor George Barger.

6. Dr. J. J. Abel of the Johns Hopkins University has prepared a crystalline insulin which appears to be a pure hormone necessary for the maintenance of normal sugar metabolism. [Insulin is secreted by the pancreas and its deficiency is the cause of diabetes.]

7. "Synthalin," a German preparation designed to supplement or replace insulin in the treatment of diabetes, was at first widely hailed, but proved a disappointment.

8. Discovery of a new drug, "myrtillin," as a valuable treatment for diabetes was announced to the American Medical Association, by Dr. Frederick M. Allen of Morristown, New Jersey. [Scientists have gone to Siam where plants supplying this drug grow, to study diabetes among the Siamese who are in the habit of using it for this disease.]

9. Liver extract can be used to cure pernicious anemia, Drs. George R. Minot, William P. Murphy and E. J. Cohn of Harvard University announced; also the latter extracted from liver an extract which produces red corpuscles which is probably the active ingredient.

10. A diet that simulates a condition in the body brought about by starvation, has been found by Drs. F. B. Talbot, K. M. Metcalf and Margaret E. Moriarity at the Massachusetts General Hospital in Boston, to give very successful results in treating epileptic children.

11. Vitamin C, the substance that wards off scurvy, is present in milk as well as in the fresh vegetables usually relied on to supply it, was the report by Professor L. F. Meyer, following extensive experiments at the University of Berlin.

12. Ergosterol was declared to be the really active and essential substance in the antirachitic [preventing rickets] vitamin, by a number of investigators working independently of each other.

13. Dr. Alfred F. Hess of New York reported that dried milk that has been treated with ultra-violet light is the most practical of the irradiated foods that have been used to prevent rickets in babies.

14. Preventive vaccination for smallpox and typhoid, large quantities of quinin and elaborate mosquito control measures contributed to checking outbreaks of disease epidemics in the South after the Mississippi flood [and also after the Vermont floods].

15. Drs. E. G. Wakefield and W. W. Hall of the United States Navy Medical Corps completed a systematic survey of heat injuries and one of the first investigations into the physiological reactions underlying sunstroke.

16. Discovery of the germ causing trachoma, a serious disease of the eye that has been especially trouble-

some among the Indians, was announced by Dr. Hideyo Noguchi of the Rockefeller Institute, New York.

17. A curative antitoxin for erysipelas, first developed by Dr. K. E. Birkhaug of Rochester, New York, has been tried out with highly successful results at the Bellevue Hospital in New York, which has one of the largest erysipelas clinics in the world.

18. Streptococcus germs isolated from skin lesions of erysipelas are capable of causing sore throat without any skin affection, it was found by Drs. George F. and Gladys H. Dick, at the John McCormick Institute for Infectious Diseases. [The Doctors Dick discovered that scarlet fever is caused by a particular strain of streptococcus. A skin test for susceptibility to the disease has been devised and a preventive and curative antitoxin (serum) has been produced against it.]

19. Progress in the work of developing a serum to fight the African sleeping sickness was announced by Dr. William H. Taliaferro of the University of Chicago. [The organism which causes this disease is a protozoon belonging to the animal kingdom. The cause of the sleeping sickness of temperate climates is not known. It is probably a germ so small it passes through compact filters and cannot be seen in the microscope. The germs are called filtrable or ultramicroscopic viruses. Hog cholera, smallpox and probably rabies are caused by this kind of germs.]

20. A color test for tetanus and diphtheria toxins has been worked out by Drs. Lucy Mishulow and Charles Krumwiede of the New York City Health Department that will greatly speed up the commercial production of these products. Hitherto toxins have had to be tested out on live guinea-pigs, a time-consuming and not altogether accurate procedure. [Toxin is the product of the growth, usually in liquid media, of bacilli. It is dried and weighed. Its killing dose for guinea-pigs must be accurately determined and then the exact amount of antitoxin (serum from an immunized horse) necessary to neutralize this dose is determined also on a guinea-pig. In this way toxins and the antitoxins used by physicians are standardized by the United States Public Health Service.

The writer of this letter working at the University of California has recently discovered a new type of the tetanus (lockjaw) bacillus. [A further knowledge of the types of tetanus bacilli may have a bearing upon the improvement of the serum used for the prevention of tetanus.]

21. Dr. Florence B. Seibert of the University of Chicago has produced an active protein in crystalline form which represents a step nearer the solution of the actual chemical nature of tuberculin. [Tuberculin is one of the products of the growth of the germ causing tuberculosis. It is used in testing human beings and cattle for tuberculosis. Unfortunately no serum has proved efficacious in this disease, though a vaccine said to be effective for very young children being brought up in a tuberculous environment has been announced by scientists of the Pasteur Institute. It is one of the few vaccines that is given by mouth.]

22. Statistical evidence that the first-born child in a family is more likely to have certain malformations of mind and body than later children, and that such malformations are not likely to recur in later births in the same family, was presented by Dr. G. F. Still, professor of children's diseases at King's College, London.

23. The utility of x-ray photographs of the head as a positive means of identification was demonstrated by Drs. William L. Culbert and Frederick M. Law of New York when they identified an unknown body with their aid.

24. Heart disease occurs less frequently in children who have had their tonsils removed than in those who have not, said Dr. A. D. Kaiser of Rochester, New York, before the American Medical Association. [Studies recently completed at the Hooper Foundation, University of California under grants from the Coleman Fund for Research concerning the causes of deafness have shown that certain strains of streptococci taken from infected teeth, ears, and tonsils of human beings and injected into the blood of rabbits cause very definite vegetations (excess tissue growth) in the valves of the heart. They also localize in and cause damage to the joints.]

25. An extract from the liver of dogs that will keep blood from clotting was discovered by Dr. W. H. Howell of Johns Hopkins University.

26. A new anesthetic known as avertin that lacks many of the undesirable features of the anesthetics now in use, is being tried out in German hospitals.

The health and economic welfare of the human race are in the guiding hands of professional men of high scientific standards. If we are to reap to the full the benefits conferred by the constructive attainments of these tireless workers, cooperation of the public is imperative. They cannot do it all.—American Association for Medical Progress, Inc.

California Hospitals—In the special hospital number of the *A. M. A. Journal* for March 24 appears the first edition of the American Medical Association Hospital Register. Doctor Colwell, secretary of the Council on Medical Education, states:

"This report is the result of the special census of hospitals taken within the past few weeks, and the statistics, therefore, are new and not obtainable elsewhere. In addition to information that is of general interest, there are a number of facts concerning the hospital situation in California. For example, the California section of the data on page 912 shows that there is a total of 262 general hospitals with a capacity of 24,112 beds and having on the average 15,778 patients, the percentage of occupancy being 65.4 as compared with 66 per cent occupancy for all the general hospitals of the United States. The nervous and mental hospitals of the state number thirty-two, with a capacity of 17,776 and having 16,764 patients.

"Going on through the California section we find similar statistics for each of the other types of hospitals, giving a total of 421 registered hospitals with 49,844 beds and 38,634 patients, plus 2638 bassinets or a grand total capacity of 52,482 beds for all the hospitals in the state.

"Turning a leaf, you will find on page 914 complete statistics for each of the different agencies that control hospitals within the state. Data of interest are found on pages 918 and 919, and especially on page 925, where there is a complete list of all the hospitals in California that are admitted to the A. M. A. Hospital Register, giving the name and location of the hospital; the type of service rendered, the capacity; the average number of patients; whether the hospital is approved for the training of interns; for residencies in specialties, and whether approved by the American College of Surgeons. Its status regarding nurse training is also indicated. You will observe that thirty-seven hospitals in California are approved for internships by the Council on Medical Education and Hospitals, and that twenty-two are approved for residencies in specialties. Seventy hospitals with a capacity of 1373 beds were not admitted to the register.

"A list of fifteen approved clinical laboratories in the state is printed on page 981."

READERS' FORUM

Lay Anesthetists—Hospitals Using Same

Sacramento, California,
March 21, 1928.

California and Western Medicine,
San Francisco, California.

Dear Doctors—We are enclosing herewith a copy of a resolution adopted at the February 1928 meeting of the Board of Medical Examiners relating that the administration of anesthetics by unlicensed individuals constitutes a violation of the Medical Practice Act. We would appreciate the publication of this resolu-

tion in California and Western Medicine as specified in the resolution.

Very truly yours,
C. B. Pinkham, M. D.,
Secretary-Treasurer.

* * *

Board of Medical Examiners
State of California
Sacramento, California,
March 3, 1928.

To Whom It May Concern:

At a regular meeting of the Board of Medical Examiners held at 955 South Olive Street, Los Angeles, February 27 to March 1, inclusive, there came before the board for discussion the question of lay anesthetists and, after the matter was thoroughly discussed, the following resolution was adopted:

Whereas, It has been called to the attention of the Board of Medical Examiners that a number of physicians and surgeons and hospitals throughout the State of California permit anesthetics to be administered by persons not licensed to so do under the Medical Practice Act, such administration of anesthetics by such unlicensed persons constituting violations of the Medical Practice Act, now therefore be it

Resolved, That, inasmuch as the administration of anesthetics by persons not licensed under the Medical Practice Act constitutes a violation of said act, the secretary of the Board of Medical Examiners be, and is hereby, requested to give notice to physicians and surgeons and hospitals in order that physicians and surgeons and hospitals may govern themselves accordingly; and be it further

Resolved, That the publication of this resolution in California and Western Medicine shall constitute such notice to physicians and surgeons, and be it further

Resolved, That the mailing of a copy of this resolution to hospitals shall constitute notice to said hospitals.

In conformance with the above resolution, we are sending you this mimeographed notice for your earnest consideration.

Board of Medical Examiners,
State of California.
By Charles B. Pinkham, M. D.,
Secretary-Treasurer.

Transactions Wanted

March 7, 1928.

California and Western Medicine,
1016 Balboa Building,
San Francisco, California.

Gentlemen—We find that we are very much in need of several volumes of the early "Transactions of the California State Medical Society," and it has been suggested that it might be possible to secure one or more of the missing years by a notice placed in the journal.

Will you print for us an item as follows in one of your issues? Yours very truly,

Mary E. Irish, *Librarian.*

Wanted—"Printed California State Medical Society Transactions for the years 1881 and 1886, the eleventh and sixteenth sessions."

The Barlow Medical Library, 742 North Broadway, Los Angeles, is anxious to complete its files of "Transactions of the California State Medical Society." It has a complete file to 1901 except for the eleventh and sixteenth sessions, which appeared in the years 1881 and 1886. The librarian, Mrs. Mary E. Irish, would be glad to communicate with any physician having either or both copies.

Doctors' Day

This letter was received too late to call attention to the "Doctor's Day" meeting on March 25; but it is published for the welcome tribute of one who has watched with understanding sympathy the surgeon at his work:

Editor, California and Western Medicine,
San Francisco, California.

Dear Sir—On Sunday, March 25, we are planning to have "Doctor's Day," the first of an annual Sunday to bear this name. Suggestions of "Health Day," etc., have been made, but the term adopted is to be used because it is to be a service in honor of the modern, competent physician and surgeon.

We have been impelled to do this because of a sense of duty to spread the knowledge of physical blessings available because of the skill of modern medical science. All too frequently our attention is called to a calamity in some home because someone for "religious reasons" has refused to admit a doctor to minister with his skill to the person afflicted with an ailment that has been conquered by the modern physician or surgeon. Doctors never advertise and the public is largely ignorant of the blessings available for the people who should seek them.

During the war it was my place to serve as chaplain in a large hospital center at Souilly near Verdun during the St. Mihiel and Meuse-Argonne offensives. I saw the modern surgeon at work unrestricted and free to act immediately as he thought best. I have been told that the percentage of successful results in his favor is 98 per cent; the 2 per cent of deaths included those who arrived dead in ambulances who, being in the ambulances, were counted as hospital patients. Whatever the exact figures may be, my own observation showed me an amazing story to be carried to the world regarding the skill of those great physicians and surgeons.

It was my business, incidentally, to bury the dead and, considering the huge number of sick and wounded, the casualties were astonishingly few among those who reached the hospitals.

As I watch the doctor finish up his long years of study, his hospital intern period, and then his gradual establishment in practice, and at the same time his extreme reticence and modesty in the matter of proclaiming his ability, I have come to honor him more than ever.

I pray for many sick people. My prayers always include the advice, "Call the doctor and do as he prescribes." My prayers are more to quiet the disturbed mind and help to get the patient in the best possible attitude.

Thanking you in advance for any assistance you may care to give to the publicity of this coming day, I am Sincerely yours,

Leslie C. Kelley,
Rector of St. Paul's.

Notice to Industrial Surgeons

The necessity of furnishing a written report on a prescribed form to the employer and deputy commissioner of the United States Employees' Compensation Commission by physicians called upon to treat injured longshoremen and stevedores is stressed in the following letter:

Emma W. Pope,
Secretary California Medical Association,
San Francisco, California.

Dear Doctor—I would like to call the attention of the medical profession of California through you to a provision of the United States Longshoremen's and Harbor Workers' Compensation Act which will be of some importance to physicians treating injured longshoremen and stevedores. This provision is not generally known and contains requirements somewhat more stringent than those contained in the compensation act of the State of California.

The provision to which I refer is found in Section 7 (a) of the United States Longshoremen's and Harbor Workers' Compensation Act and provides that where the employer fails to provide medical treatment to an

injured harbor worker who later consults his own physician, no claim for such medical or surgical treatment shall be valid or enforceable against the employer unless within twenty days following the first treatment the physician giving such treatment furnish to the employer and the deputy commissioner a report of such injury and treatment, on a form prescribed by the commission. The form referred to is a form prepared by the United States Employees' Compensation Commission for surgical reports bearing the number U. S. 204. Supplies of this form can be obtained from this office upon request. The form itself carries information concerning this requirement.

The United States Longshoremen's and Harbor Workers' Compensation Act was passed by Congress on March 4, 1927, and took effect July 1, 1927. It applies to all persons performing service upon vessels and shipping upon navigable waters except the master and members of the crews of such vessels. Its provisions parallel fairly closely those of the California Workmen's Compensation Act, but occasional divergences will be noted. It is administered by fourteen deputy commissioners throughout the United States, California being in District No. 13, the headquarters of which are at 518 Mills Building, San Francisco, California.

Thanking you for placing this information before such physicians as are likely to treat industrial cases coming under this law, I remain

Yours very truly,

WARREN H. PILLSBURY,
Deputy Commissioner.

MEDICAL ECONOMICS

Commission on Medical Economics—Committees Appointed—President A. Lawrence Lowell, chairman of the Commission on Medical Education, has appointed the following committees of the Commission to deal with certain groups of problems:

Committee on Premedical Training—Chancellor Samuel P. Capen (chairman), University of Buffalo; Dean Henry G. Gale, University of Chicago; President Walter A. Jessup, University of Iowa; President Clarence C. Little, University of Michigan; Professor Leon B. Richardson, Dartmouth College.

Committee on Training in the Medical Sciences—Professor Lafayette B. Mendel (chairman), Yale University; Professor John J. R. Macleod, University of Toronto; Professor Charles R. Stockard, Cornell Medical School; Professor George H. Whipple, University of Rochester Medical School; Professor Hans Zinsser, Harvard Medical School.

Committee on Clinical Training—Dean David L. Edsall (chairman), Harvard Medical School; Professor George Blumer, Yale Medical School; Dean Hugh Cabot, University of Michigan Medical School; Professor Elliott Cutler, Western Reserve Medical School; Professor George E. de Schweinitz, University of Pennsylvania; Professor Charles P. Emerson, Indiana University Medical School; Professor Benjamin P. Watson, Columbia University Medical School.

Dr. Willard C. Rappleye, director of study of the Commission is secretary of each of these committees.

TWENTY-FIVE YEARS AGO *

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Volume 1, No. 6, April, 1903

From the veto message of the osteopath bill by Governor Heber M. Wells of Utah, March 16, 1903:

. . . Practice in medicine:

Whatever the term or nature of the tenets of the particular school which this bill aims to recognize, its practice must, it seems to me, be considered a branch of the science of medicine. After all, the physician, of whatever school or designation, has to deal with the same physiology, the same conditions, the same laws of cause and effect, in health and disease. All practitioners may not have the same knowledge and the same skill, yet our statutes have wisely provided, as a matter of public policy and protection, that a certain amount of skilled knowledge all of them must have. . . .

. . . Safeguards swept away:

Science is progressive; advancement cannot be stayed, in the art of healing, least of all; and the dogmatism of disputants, whether in medicine or anything else, must soon yield to the light of truth and reason. Whatever merit osteopathy may have will assuredly find recognition. The present contention is, that in the bill before me the necessary requirements and safeguards with which the law surrounds the physically afflicted are thrown down and swept away. . . .

From an article on Iodid of Potash Eruptions:

. . . Case demonstrated by Dr. Douglas W. Montgomery (through the courtesy of Dr. L. W. Allen) of a tuberous iodid of potash eruption, presented before the Academy of Medicine, February 24, 1903. . . .

. . . In reply to a question as to external treatment, Doctor Montgomery said:

"There is no treatment but the withdrawal of the drug. In about five weeks the iodid rash will subside, leaving nothing, but in some cases, scars, which may be cribriform. . . ."

From the minutes of the thirty-third annual session of the Medical Society of the State of California, held at the Potter Hotel, Santa Barbara, April 21-23, 1903:

. . . Election of officers:

Doctor Kerr placed in nomination the name of Dr. H. Bert Ellis for the office of president for the ensuing year, calling attention to his long service in the state society. . . .

. . . Dr. J. Henry Barbat nominated for the office of first vice-president, Dr. W. H. Flint of Santa Barbara. . . .

. . . For the office of secretary Doctor Brainerd placed in nomination Dr. George H. Evans. . . .

. . . For treasurer Dr. J. Henry Barbat nominated Dr. E. E. Kelly. Nominations closed and secretary cast the ballot. . . .

. . . Board of Medical Examiners, Dudley Tait, San Francisco; F. M. Pottenger, Los Angeles; D. E. Osborne, St. Helena; W. S. Thorne, San Francisco; and S. H. Buteau, Oakland, were placed in nomination. . . .

. . . For delegates to American Medical Association, Drs. C. G. Kenyon and Philip Mills Jones were nominated and elected to serve with Dr. H. Bert Ellis, elected last year.

From the article on "Tropical Diseases in California" by Dr. William Watt Kerr, professor of clinical medicine, University of California:

. . . Address in medicine.

Mr. President and Members of the Medical Society of the State of California: An opportunity such as this may be profitably utilized by making reference to the increasing frequency with which some diseases that a few years ago were practically unknown to us are now found in San Francisco and, I presume, in every seaport town on the Pacific Coast. . .

* * *

. . . Plague has been so thoroughly discussed, both in the medical and lay press, that it is not necessary to say much about it at this time. Unfortunately the great weight of expert testimony in this state, and all of that supplied by the federal authorities, goes to prove that plague has existed in sporadic form in California.

To an onlooker the situation in San Francisco is somewhat ludicrous. In February, 1901, the federal authorities sent the Barker, Flexner, Novey commit-

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

tee, who reported on the existence of plague; next they sent Flint, who made a similar report; he was followed by White, who was instructed to report independently to the Treasury Department all cases of plague that came under his observation; but still the people were dissatisfied, and Surgeon-General Wyman visited California last December, and expressed himself satisfied as to the accuracy of the reports furnished by his subordinate officers. Nevertheless, at a meeting of merchants held a few weeks later, it was again suggested that the federal authorities be requested to send an unbiased committee to San Francisco. . . .

. . . The situation, however, is serious, so far as the commercial interests of the state are concerned, but the peril to them comes not so much from bubonic plague, as from the plague of the daily press. The poor policy followed by some of our newspapers in heaping abuse upon the local health authorities, together with the peculiar conduct of members of the state and city governments, has awakened suspicion in other parts of the country that something is being concealed, and there is a manifest want of confidence in California which competing states have not been slow to use to their own advantage. . . .

* * *

. . . One of the most notable features of clinical medicine during the last two years is the number of patients who have come under observation suffering from various intestinal parasites, hitherto unknown in California. . . .

From an item on Medical Education:

. . . The profession of medicine need not feel shame at any inquiry into the character of its regular practitioners, but only the self-satisfied among us would assert that even a higher level may not be attained. Considering the matter from the viewpoint of the profession, nothing could be more wholesome than a high standard of requirement for admission to membership in a body that has always been regarded by the public as one of general culture and intelligence. . . .

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. Pinkham, M. D.
Secretary of the Board

According to reports an individual calling himself Mohammed Ali, and falsely claiming graduation from the medical department of the University of California, has recently been making public addresses in Indiana.

Investigation reports relate that Mr. Edward C. Asher, business manager of the Industrial Injury Staff, has recently opened a ten-room office in the Howard Building, San Francisco, and is reported as also conducting a similar office in Oakland and having affiliation with Doctor Early, an industrial surgeon in Los Angeles. The business card reads: "In case of accident to any employee, send him to or telephone Industrial Injury Staff doctors." This appears to be another instance of a corporation practicing medicine, the business being conducted by laymen who pay a small monthly salary to licensed physicians and surgeons.

According to reports Matthus Blankenburg, self-styled "Lord Heir of the Old Castle of Blankenburg," entered a plea of guilty to a charge of violation of the Medical Practice Act in the Superior Court, Riverside, California, on March 3, 1928, and was sentenced to pay a fine of $300. On failure to pay said fine he will find it necessary to serve 150 days in the county jail. (Prior mention, "News Items," February 1928.) "When some of his asserted patients died he allegedly furnished the State Board of Health with crude death certificates penciled on coarse writing paper and usually carrying the following asserted wording: 'M. P. Sanchez died this afternoon at 2:30 of the T. B. He was too far gone.'" Another certificate introduced in evidence said: "This is to certify . . . died today at ten minutes after three o'clock. He was too far gone. Your truly."

Reports of the continued theft of physicians' bags from their automobiles relate that drug addicts are believed to commit the thefts as narcotics are always extracted.

Charles A. Bailey, M. D., of Los Angeles was, after formal hearing on narcotic charges held before the Board of Medical Examiners February 29, 1928, placed on one year probation with the understanding that he would surrender his narcotic permit.

At a regular meeting of the Board of Medical Examiners held in Los Angeles the license of John Elmer Baker, M. D., was on February 29, 1928, revoked after a formal hearing based on narcotic charges.

The license of J. F. Balzer, Los Angeles naturopath, was revoked by the Board of Medical Examiners February 28, 1928, based on his conviction and incarceration in San Quentin prison.

"The question of what constitutes 'moral turpitude' as defined in Section 14 of the Medical Practice Act, became an issue in the case of Fred J. Barnet, M. D., Los Angeles physician, convicted last October in the municipal court of Los Angeles of selling liquor illegally. After a formal hearing before the Board of Medical Examiners on March 1, 1928, the case was continued to the July 1928 meeting."

A petition of Percy Purviance, Berkeley chiropractic head, asking that Governor C. C. Young be restrained from making appointments to the State Board of Chiropractics has been striken from the court records of Judge Louis Ward. Judge Ward advised Purviance yesterday that no restraining order could be issued against Governor Young until such time as the appointments were made, and then could be directed against the appointees to prevent their taking office. (Oakland *Tribune,* March 6, 1928.)

"Bishop" E. R. Cook, head of the Oakland Christian Psychosophy Institute, is in San Quentin, starting his term of five years to life imprisonment for second degree murder in connection with the death of Mrs. Elizabeth Buckles on December 20 following an illegal operation. . . . Edwin van Dickeson, who under the alias of Dr. I. A. Cole is also charged with the murder of Mrs. Buckles, is in jail awaiting trial. He was arrested in Buffalo, New York, where he fled following the death of the woman. (Oakland *Tribune,* February 23, 1928.)

Dr. George H. Coulthard, 303 Pacific Avenue, turned his face weeping before Judge Henry M. Willis, who admitted the physician to probation yesterday morning after conviction a few weeks ago on a charge of violating the State Poison Act, in selling of morphin to one Henry Warner, said to be a dope addict and a state special agent employed by the pharmaceutical board. . . . Doctor Coulthard was found guilty by the jury of sale of morphin to the said Special Agent Warner on December 13, 1927. The jury found the physician not guilty of two additional counts of the complaint. (Long Beach *Sun,* February 26, 1928.)

The board found Dr. James A. Hadley of Arcata guilty of having performed an illegal operation. The young girl patient in the case died shortly after she had received treatment. Doctor Hadley was tried at Eureka for first degree murder in connection with the death, but a jury freed him. The board tried him for the asserted operation and revoked his license (March 1, 1928). He admitted treating the girl, but denied performing such an operation. . . . (Los Angeles *Times,* March 2, 1928.)

THE COMMERCIAL EXHIBIT

The Fifty-Seventh Annual Session C. M. A.—Sacramento

Keniston-Root Corporation and Benjamin & Rackerby—Among the interesting exhibits will be that of Keniston-Root Corporation, Los Angeles, and Benjamin & Rackerby, Sacramento, who jointly will occupy Space No. 7 with a complete line of new and up-to-date surgeons' instruments, sterilizers, office furniture, carbon arc lamps, etc. The members of the California Medical Society are invited to make Benjamin & Rackerby's store in Sacramento, located at 919 Tenth Street, their headquarters.

Certified Laboratory Products of San Francisco and Glendale will have an attractive display of their various products, including nitrous oxid, medical oxygen, ethylene, carbon dioxid, and intravenous and intramuscular medications.

Competent members of the organization of Certified Laboratory Products will be on duty at the exhibit daily during the meeting to explain to visitors quality, purity, and use of the various items marketed to the medical profession by this company.

Medical Protective of Fort Wayne—All members of the California Medical Association and friends are cordially invited to visit Booth No. 22 of the Medical Protective Company. Mr. I. M. Van Slyke of the Los Angeles office and Mr. William H. Williams of the San Francisco office will be delighted to have you call, whether merely to say "hello" and renew old acquaintances or to satisfy yourself on some question of malpractice protection. Consider them at your service and feel free to call upon them for anything which may contribute to making this the most pleasant and successful society meeting you have ever attended.

Dewar & Hare—Dewar & Hare, 1205 Fruitvale Avenue, Oakland, wish to thank their many clients for their generous support during the past year.

The quiet enthusiasm which has greeted the results obtained from the use of the "Thermotax" diathermy generator and the "Electrotax" low voltage sine wave and galvanic generator, is due to the true form and ease of control of their outputs. This apparatus is backed by real service, which continues throughout the life of the apparatus.

Dewar & Hare represent The Engeln Electric Company of Cleveland, Ohio, makers of high-class x-ray and physiotherapy equipment.

Horlick's Malted Milk Corporation will be among the exhibitors at the meeting of the California Medical Association, and plans unusual activities in the interests of its products: Horlick's the Original Malted Milk, Horlick's Chocolate Malted Milk, and Horlick's Milk Modifier. Representatives of the Horlick firm will be present to explain the uses of these products, which have an application to many of the dietary problems of the medical profession.

Horlick's Milk Modified, a maltose dextrin sugar, has attracted an unusual amount of interest, as have the other products which will be exhibited and demonstrated. This interest, we are told, is indicative of a general increase in the popularity of the Horlick products throughout the country.

The Bausch & Lomb Optical Company of California will exhibit at the California Medical Association in the Auditorium at Sacramento.

Instruments to be shown include a complete line of new diagnostic sets, new microscopes with built-on stage, blood counters, new biological colorimeter, rotary clinical microtome and euscope.

All Bausch & Lomb Optical Company's instruments, including optical glass, are manufactured at Rochester, New York. The first microscope was made in 1872. Since then approximately 200,000 have been supplied to American institutions, physicians, and other workers—a greater number than any other manufacturer, domestic or foreign, can point to. This achievement is the result of correct designs, craftsmanship, fair dealing, and service.

Affleck Laboratories, established in Sacramento in 1922, is undoubtedly the most complete institution of its kind in the West. It is composed of three departments: Analytical, Biologic Depot, Exclusive Pharmacy, each a distinct unit but each dependent upon the other to some extent. The Analytical Department comprises chemical, bacteriological, and serological units, operated solely for the physician. The Biologic Depot renders service both to the physician and the laity in its complete stock of biological products always under refrigeration. The Exclusive Pharmacy is for the service of the laity, and is operated entirely for the compounding of physicians' prescriptions from the finest drugs and chemicals.

Mellin's Food Company—The exhibit of the Mellin's Food Company will be in charge of Dr. William S. Wallace, showing the well and favorably known preparation of Mellin's Food, for the modification of fresh cow's milk, also their new product, Mellin's Food biscuits for invalids, convalescents, and the aged, and are particularly suitable during the period when the baby is being weaned, and the introduction of solid food becomes necessary, for they contain a large percentage of Mellin's Food, which is recognized everywhere as nourishment especially appropriate in early life.

The Calso Company—Appreciating fully the material advantage of asking the attention of the Medical Association to our product Calso Water, we are again making an exhibit at the Sacramento meeting.

We are glad to be a part of the exhibit feature of the meeting and to avail ourselves of this opportunity of continuing to present our product to the notice of the medical profession, from whom we have in the past fourteen years received so much commendation, which we greatly appreciate, and will gladly continue to keep our product 100 per cent ethical.

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Deshell Laboratories, Inc.—At the Petrolagar booth there is an active demand for the set of drawings by Tom Jones of the University of Illinois, illustrating various types of constipation and bowel conditions. Sets are given free or mailed. They are helpful in consultations with patients and for comparison with roentgenograms. These pictures are distinctive and somewhat different from the usual anatomical drawing of the bowel in that they show the perspective. They are not flat.

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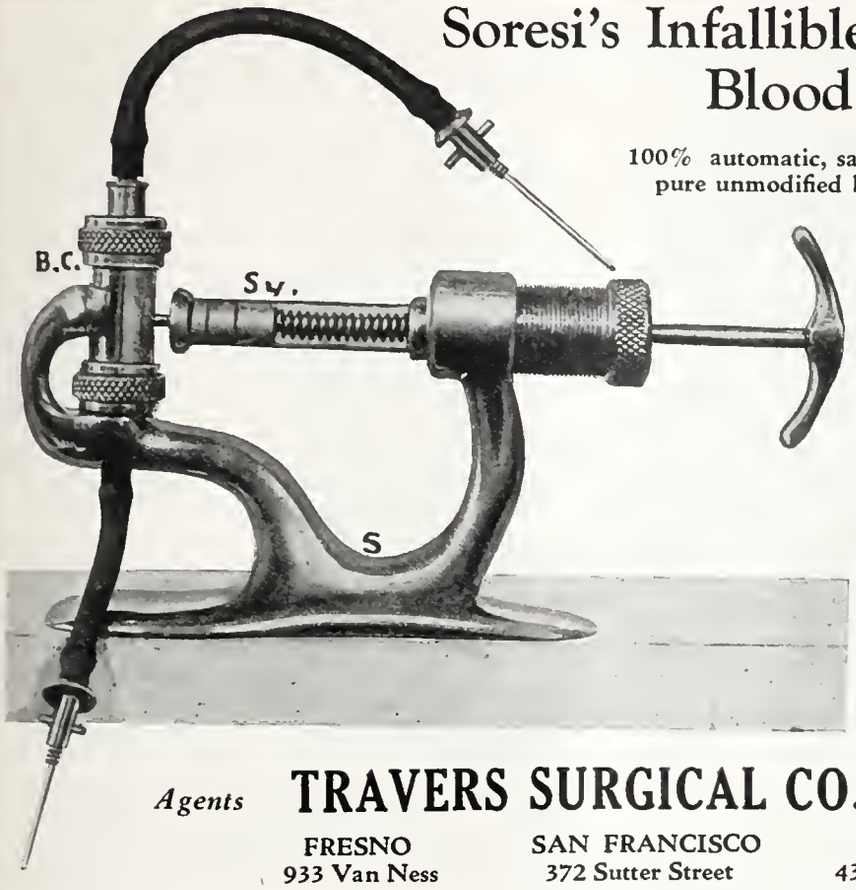

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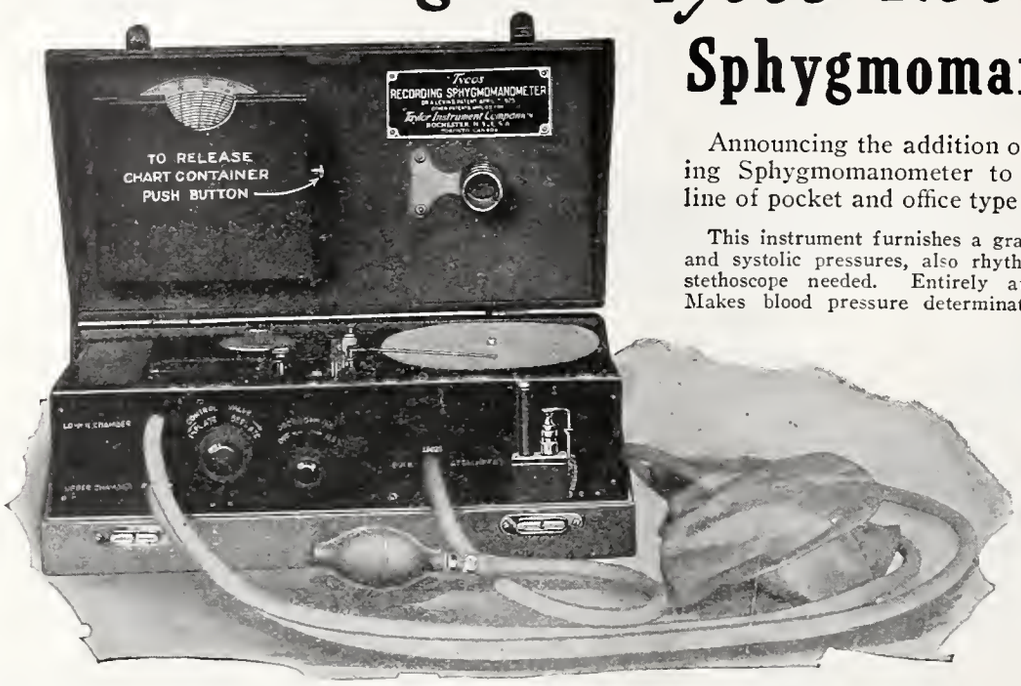

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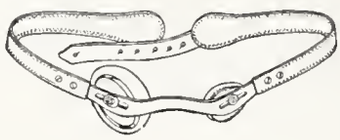

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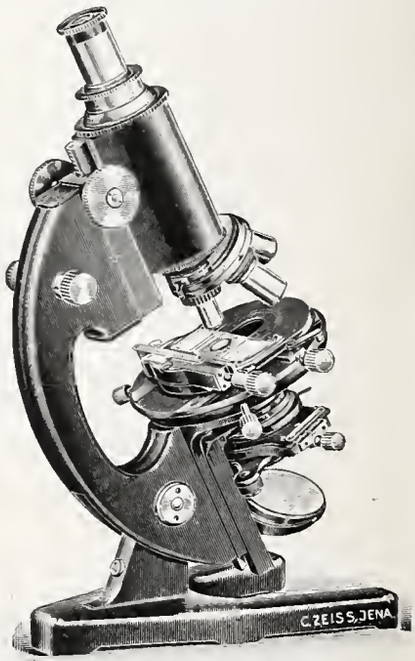

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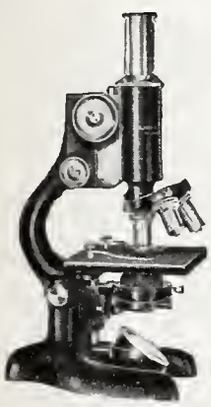

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But your own books belong to you; you treat them with that affectionate intimacy that annihilates formality. Books are for use, not for show; you should own no books that you are afraid to mark up, or afraid to place on the table, wide open and face down. A good reason for marking favorite passages in books is that this practice enables you to remember more easily the significant sayings, to refer to them quickly, and then in later years it is like visiting a forest where you once blazed a trail.—William Lyon Phelps.

Campaign Against the "Common Cold"—A gift of $195,000 by the Chemical Foundation to the School of Hygiene and Public Health of Johns Hopkins University is to be devoted to an exhaustive study of "the origin, nature, and possible cure of the common cold." The school has already made some investigations of the causes of colds.

Value of Current Periodicals—One of the greatest factors contributing to individual aid and social improvement is a "creative discontent," a discontent with things as they are, and with the impulse to make them what they ought to be, to the end that men and women may realize in the development of their personalities the most and the best of life. In the process of making new worlds for old through kindling the divine spark of such a creative discontent, current periodicals in our libraries are a most important factor.—*The Library Journal.*

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Amendments to the Constitution

Third Printing

Enabling Act

Amend Article XII of the Constitution relating to Amendments by striking out the existing article and substituting in lieu thereof, the following:

The House of Delegates at any annual meeting including the meeting at which this amendment is adopted may amend any article of this constitution by a two-thirds vote of the delegates present and acting; provided that any amendment to the constitution is submitted in writing and laid on the table for twenty-four hours previous to being considered and acted upon.

Article XII

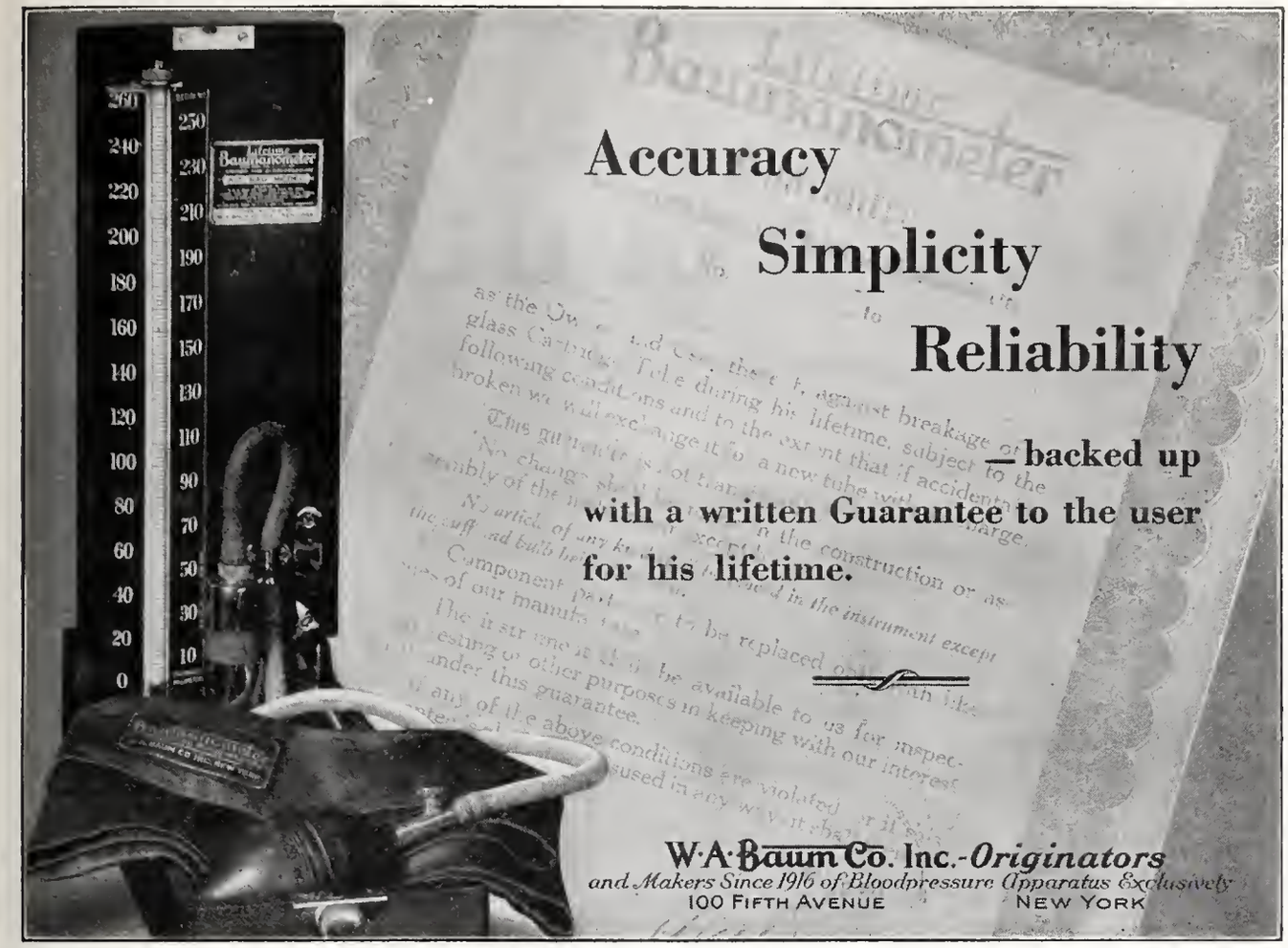
Incorporation

To aid in carrying out the object of the Association, the House of Delegates at any session of any regular or special meeting thereof, may by a two-thirds vote of the members thereof present and acting, authorize, empower and direct the Council to cause the formation and organization of a non-profit corporation under the laws of the state of California, without capital stock, with such incorporators, name, purposes, objects, principal place of business, term, number of directors and directors to serve for the first year and until their successors are elected, and with such provisions regarding the voting power and property rights and interests of the members of the corporation and such further provisions in the Articles of Incorporation thereof, and with By-Laws and composed of such members representing this Association as the Council shall prescribe, fix and determine. The House of Delegates may at its option in connection with the granting and giving of such authority, power and direction to the Council, prescribe, fix and determine any or all of such matters pertaining to the said corporation, its Articles of Incorporation, and any provision thereof, By-Laws and membership, and its action thereof shall bind the Council; and the House of Delegates at any session of any regular or special meeting thereof may by a two-thirds vote of the members thereof present and acting, authorize, empower and direct the Council to grant, assign, transfer, convey and deliver to the said corporation upon the formation thereof without any consideration therefor, any property, real or personal, of the Association, which authorization, power and direction may be given prior or subsequent to the formation and organization of said corporation.

Serum for Mushroom Poisoning Found—A professor at the Pasteur Institute, Paris, has prepared a serum against mushroom poisoning by inoculating a horse with increasing doses of the toxin from four poisonous mushrooms. Hypodermic injections of this serum are said to possess high prophylactic and therapeutic value when given to laboratory animals according to the *Journal of the American Medical Association.*

An interesting demonstration of the value of the serum occurred when a family of three was stricken with mushroom poisoning. Their physician was able to secure only enough of the serum to treat the two most severely affected. These two patients recovered; the third succumbed.—*Health News.*

Jerusalem Safeguards Its Women and Children—In November last Jerusalem passed an ordinance forbidding the employment of women and of children under sixteen in all occupations in which white lead is used, and in the manufacture of mirrors, asphalt, and bitumen. The ordinance also regulates their hours of work and periods of rest.—United States Department of Labor.



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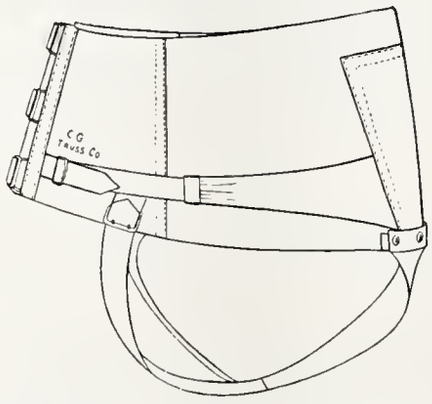

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Hospital for Crippled Children, University of Chicago—The Home for Destitute Crippled Children of Chicago is to transfer its main hospital to the campus of the University of Chicago, where new buildings providing one hundred beds will be erected. Part of the present plant of the home will be maintained as an emergency hospital and free dispensary for the West Side. The hospital will remain under the jurisdiction of the institution, but the university will provide the medical care. This is the fifth hospital for children's work now connected with the university, and its addition means another step toward establishing a clinic similar to those in Vienna and Berlin.—United States Department of Labor.

TRUTH ABOUT MEDICINES

(Continued from Page 462)

and Chemistry examined the evidence and reported in 1925 that there was no reason for believing that Colloidal Gold offers anything more in the treatment of carcinoma than do the other colloidal preparations that have preceded it. From the circular matter that is sent out for "Collodaurum" by the Kahlenberg Laboratories, Inc. (successor to the Kahlenberg-Klaus Company) it appears that this is essentially the same as the product formerly marketed as "Colloidal Gold." Further observations on the use of Colloidal Gold which have been published do not seem to permit a revision of the Council's estimate of the product. On the contrary, the new reports strengthen the Council's decision.—*Jour. A. M. A.*, February 18, 1928, p. 564.

Poliomyelitis Antistreptococcus Serum—The Council on Pharmacy and Chemistry publishes a preliminary report on poliomyelitis antistreptococcus serum. The Council reports that the use of a specific antiserum in the treatment of poliomyelitis has been proposed; that a number of reports on the use of such a serum have been published; and that two commercial products, obtained by immunizing horses against strains of streptococcus from poliomyelitis patients, have been submitted to the Council. The Council reports that because of lack of adequate evidence it had been decided not to accept any poliomyelitis antistreptococcus serum until more positive evidence for its usefulness becomes available.—*Jour. A. M. A.*, February 25, 1928, p. 617.

Separation of the Active Principles of the Posterior Lobe of the Pituitary Gland—Using both methods of fractionation by precipitation and methods of dialysis, two portions of pituitary extract were obtained, one of which responded almost entirely to the oxytocic

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method of assay whereas another portion was found to respond to the pressor method and practically not at all to the oxytocic. Both of these principles have been obtained in a state of highly potent water-soluble powders. It is reported that the substantially pure pressor principle, termed B-hypophamin, has been obtained as a white powder eighty times as potent as the International Standard Powdered Pituitary, while the oxytocic principle, termed A-hypophamin has been obtained in a form 150 times as potent as the International Standard Powdered Pituitary. From this research the indications are that the pressor principle is responsible for the diuretic-antidiuretic action of the pituitary extracts. This work will undoubtedly lead to clinical applications of these principles, though at present the work is in an experimental state.—*Jour. A. M. A.,* February 25, 1928, p. 618.

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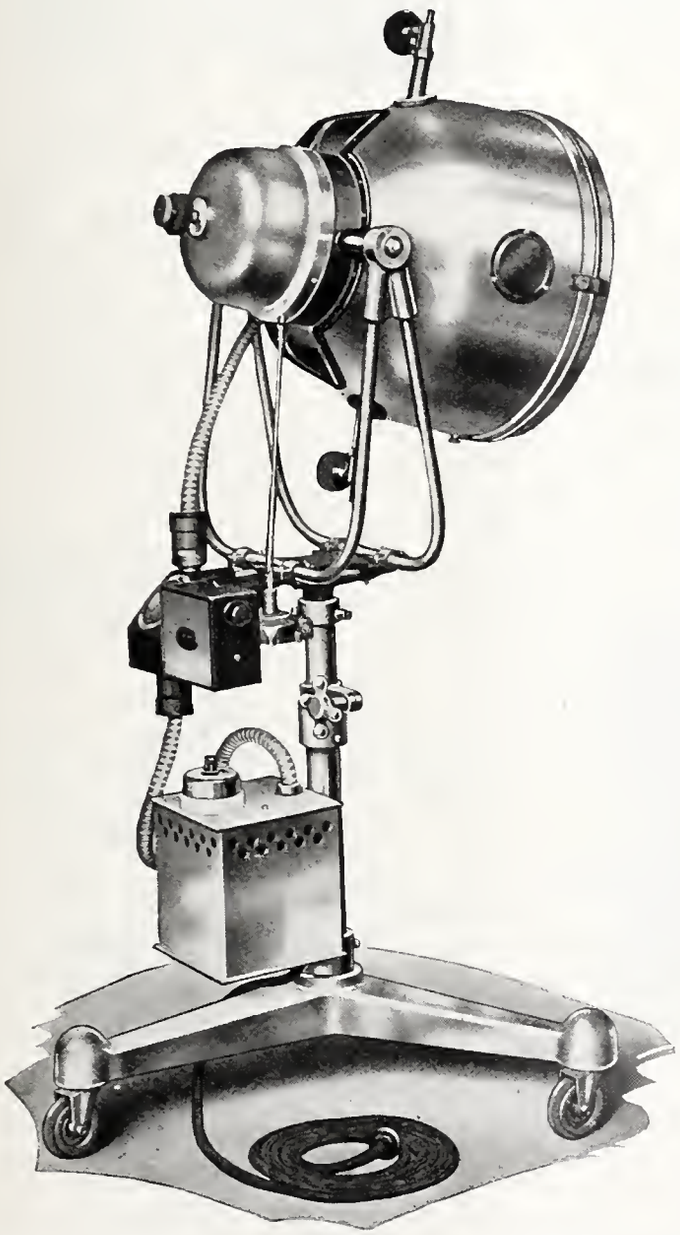

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—Anon., "Words in Pain," 1919.
Frontispiece (from the Sanskrit).

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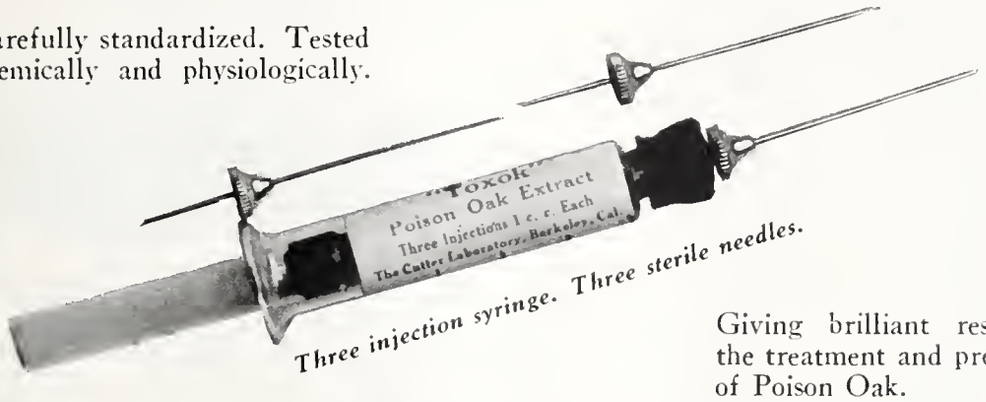

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A Million Treatments Given to Venereal Indigents—During the last eight years the various venereal disease clinics upstate have administered 1,000,000 treatments. Modern treatment given early, rapidly reduces infectiousness of patients, and it is reasonable to believe that new infections and the number of possible general paretics have been reduced by clinic activities. Many of the men and women would have been obliged to go without any scientific treatment if these clinics had not been established. Physicians in cities may refer to the clinics' needy cases or those unable to pay for long-continued treatment. In rural districts where it is impractical for the patient to attend a clinic, the state provides the physicians with arsenicals, either arsphenamin or sulpharsphenamin.—*Health News.*

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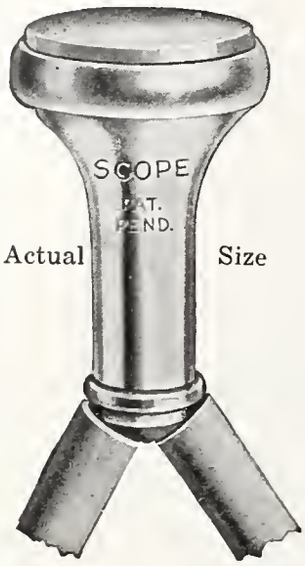

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University of California Takes Part in Medical Meet—Dean Langley Porter of the University of California Medical School and Professor Charles A. Kofoid, chairman of the department of zoology, will take part in a discussion of medical education that is being presented by the San Francisco County Medical Society on April 24, 1928.

The program includes speakers from California, Stanford, the practicing profession, and from the clergy. Every phase of medical education will be taken up by specific speakers and discussed.

The subjects and speakers will be: "The Medical School's Point of View," by Doctors Langley Porter and William Ophüls, dean of Stanford Medical School; "The Profession's Point of View," Dr. John Graves, Sr.; "The Patient's Point of View," Dr. Ray Lyman Wilbur, president of Stanford University; "The Community's Point of View," by the Rt. Rev. E. L. Parsons and Professor C. A. Kofoid.

Some results of Tuberculosis Sanatoria Clinics—During the past year twenty-four of the county sanatoria maintained clinics as a part of their case-finding program and 11,116 patients were examined. Detailed figures were available for only seven of these:

Patients Examined	Positive	Per Cent	Suspicious	Per Cent
4341	861	20	1036	24

The percentage of positive cases in the above group is somewhat higher than is usually found at a permanent clinic, but this can be explained possibly by the fact that a great many cases were referred by physicians for examination by the superintendent with the idea of encouraging sanatorium treatment.—*Health News.*

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Our records show that several statements and reminders have been sent you regarding the enclosed statement.

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You appreciate, we are sure, that physicians, like other citizens, must pay their bills promptly. They can only do so, however, when their own clients in turn pay them promptly for such professional services as may have been rendered.

A check to cover your account, which is now considerably overdue, will be appreciated.

Final Notice

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Our bookkeeper has nothing in the records of the office to show when you intend to pay the enclosed account. Perhaps the previous statements and reminders may have been overlooked or ignored.

Following the rule of this office, this overdue account will be sent to the collecting agency within ten days if arrangements for its settlement are not made prior to that time.

This collection bureau method is disagreeable to us; and we believe, also to you. By promptly sending your check all this can be avoided.

When an account is sent to the collecting agency that organization takes full charge of it thereafter.

IN THE "Miscellany" section of the September, 1927, issue of CALIFORNIA AND WESTERN MEDICINE, page 398, appeared an article relating to the "collection of fees." Following this publication, numerous orders for printing the series of gum stickers and notices as shown in the article were received by us. We therefore concluded to stock them.

Since first we put the series on the market as a stock item, the demand has grown so great that we have been compelled to print them in much larger quantities. This volume-printing has enabled us to produce them at a considerable reduction over the first printing and we are pleased to pass the saving on to the profession.

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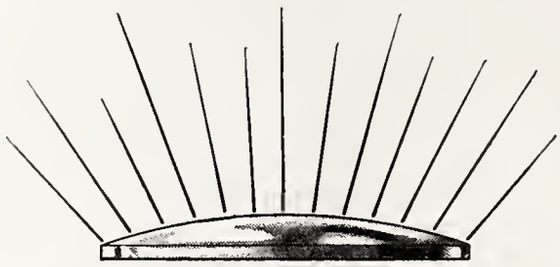

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Study Human Parasites at University of California—Research directed to the various parasites that constitute both an annoyance and a menace to human beings is being undertaken in a comprehensive study by the biology department of the University of California at Los Angeles. This is a phase of the general study of parasitology recently instituted at the University and which embraces parasites that afflict human, animal and plant life.

The purpose of the study is to determine the source, nature and development of various parasites, with the hope of being able to cope with them more effectively. Although southern California is considered a particularly advantageous locality for such a study, owing to the cosmopolitan nature of its population, no extended research of this kind ever has been undertaken here before.

Under the direction of Dr. Gordon H. Ball, the department is now giving its attention to a flagellated type of parasite known to science as *Chilomastix,* an organism that infects the intestines and about which comparatively little has been discovered.

This parasite is perhaps responsible for a variety of human ailments, especially disturbances of the digestive tract, and is perhaps toxin-producing. Knowledge of the life history of *Chilomastix* will be of unquestioned value to the medical profession, which is now obliged to combat it with comparatively little information as to its history or its effects on the human system.

At present Doctor Ball is devoting his research to investigation of the transition of the *Chilomastix* from the motile to the cyst stage, and he has had the parasite under observation for several months.

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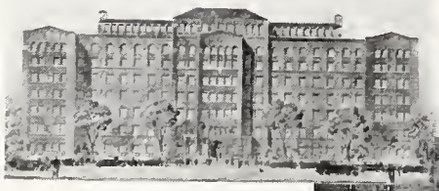
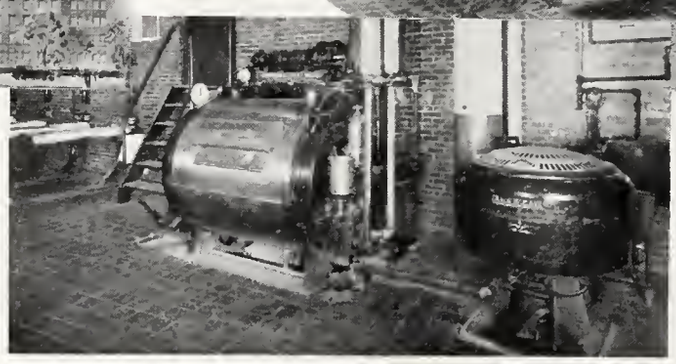
Two American Stream-line Ironing Units. Note the American Ventilating Canopy, which carries away the stale, moisture-laden air.



Harper Hospital, Detroit, Michigan. A community health center — a community educational center.



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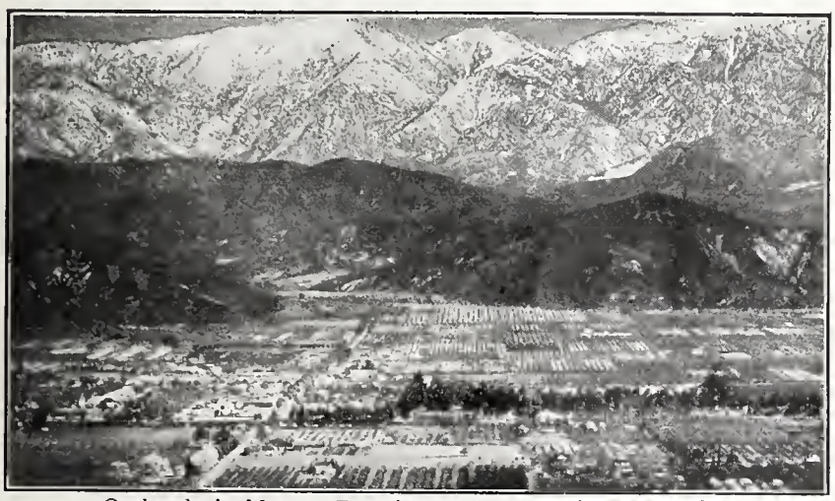

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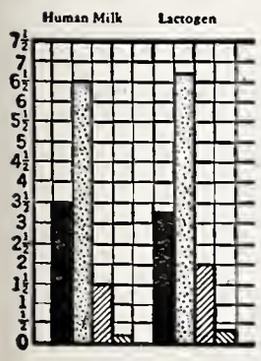

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University of California Reports State High in Cow Testing—The State of California once more leads the nation in percentage of cows under test and is second only to Wisconsin in total number of cows under test, according to a report for February issued by the Bureau of Dairy Industry of the United States Department of Agriculture. Of all cows in the state, 10.2 per cent are under test.

It is further shown in the report that Los Angeles County Farm Bureau Cow Testing Association has the greatest number of cows of any association reported in the United States, and that, while cow testing did not start in California, the oldest association in point of length of continuous service is the Ferndale Association, in Humboldt County.

The Directory of Activities of Cow Testing Associations reveals an increase in number of associations in the United States from 837 in January, 1927, to 947 in January, 1928. The total number of herds under test has increased from 21,128 a year ago to 23,327 this year. The total number of cows has increased from 362,014 to 414,891.

All regularly organized cow testing associations in California, which are operated under the supervision of the Agricultural Extension Service of the University of California, are following standard rules and uniform methods. These standard rules and regulations are in accord with recommendations made by the American Dairy Science Association and the United States Department of Agriculture and make the work comparable to that being carried on throughout the country.

Slight Bump—"Doesn't it upset you when you run over a pedestrian?"

"No, I've never hit one as big as all that."—*Chicago Phoenix.*

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Rooms with or without baths, suite, sleeping porches and other home comforts, as well as individual attention and good nursing.

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This theory proved to be correct and the Audotor is recommended as a therapeutic agent in cases of middle ear deafness where absolute fixation has not taken place.

It produces rhythmic air wave vibrations of inaudible frequency, periodic exposure to which has a tendency to both increase and sustain the patient's ability to receive and recognize sounds of lesser magnitude.

Systematic treatment in cases where it is indicated is resulting in improvement sufficiently lasting to be considered highly desirable by both physician and patient.

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DOCTOR.....

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Telling Patients "The Truth"—The "whole truth" in some cases, Dr. Joseph Collins, New York, believes, should not be given to patients.

In a current issue of *Harper's Magazine* Doctor Collins discusses "Should Doctors Tell the Truth?"

"Some lies," he says, "are most prejudicial to the physician's usefulness. Such are: pretending to recognize the disease and understand its nature when one is really ignorant; asserting that one has effected the cure which nature has accomplished, or claiming that one can effect cure of a disease which is universally held to be beyond the power of nature or medical skill; pronouncing disease incurable which one cannot rightfully declare to be beyond cessation or relief.

"It is frequently to a patient's great advantage to know the truth in part, for it offers him the reason for making a radical change in his mode of life, sometimes a burdensome, though necessary, change.

"But not once in a hundred instances is a physician justified in telling a patient pointblank that he has epilepsy, or the family that he has dementia precox, until after he has been under observation a long time, unless these are so obvious that even a layman can make the diagnosis," according to Doctor Collins.

"Though often it seems a cruelty, the family of the patient to whom the truth is not and should not be told are entitled to the facts or what the physician believes to be the facts. At times they must conspire with him to keep the truth from the patient, who will learn it too soon, no matter what skill they display in deception.

"On the other hand, it is frequently to the patient's great advantage that the family should not know the depth of the physician's concern, lest their unconcealable apprehension be conveyed to the patient and thus transformed into the medium in which disease waxes strong—fear. Now and then the good doctor keeps his own counsel. It does not profit the family of the man whose coronary arteries are under suspicion to be told that he has angina pectoris. If the patient can be induced to live decorously the physician has discharged his obligation."

Commenting on the opinion of Doctor Collins, one medical leader has pointed out the necessity for keeping in mind the possibilities of unwarranted malpractice suits, in case none of the patient's family is fully acquainted with the entire situation.

Where the patient's condition is hopeless and the diagnosis is well established and there are doubts as to whether the patient or family should be told the truth, the doctor should, as a matter of self-protection, make such notations on the history card and then select, at least, one member of the family in whom full confidence should be placed. Extreme care should be taken in all cases where it is essential to the welfare of the patient that the grave danger of his condition be withheld from him, that some member of the family knows of the true conditions.

However, in most cases "the whole truth and nothing but the truth" is the soundest policy.

Monument to James W. Marshall, discoverer of gold at Coloma, California, in 1848

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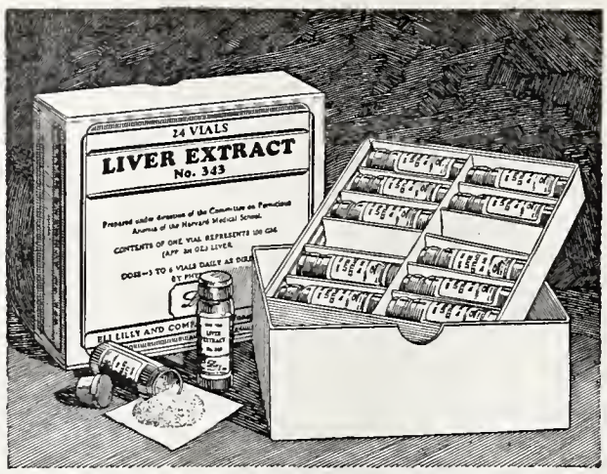

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Nature of the Liver Extract—Liver Extract No. 343 represents one of the fractions isolated by the Harvard investigators. It contains in high concentration the active principle which is effective in the treatment of pernicious anemia and is at present the most practical liver fraction for therapeutic purposes.

Liver Extract No. 343 is available as a powder. To insure stability, it is supplied in hermetically sealed vials. It is soluble in water and of high potency. The amount contained in each vial represents 100 grams (approximately 3 1/2 ounces) of fresh, raw liver.

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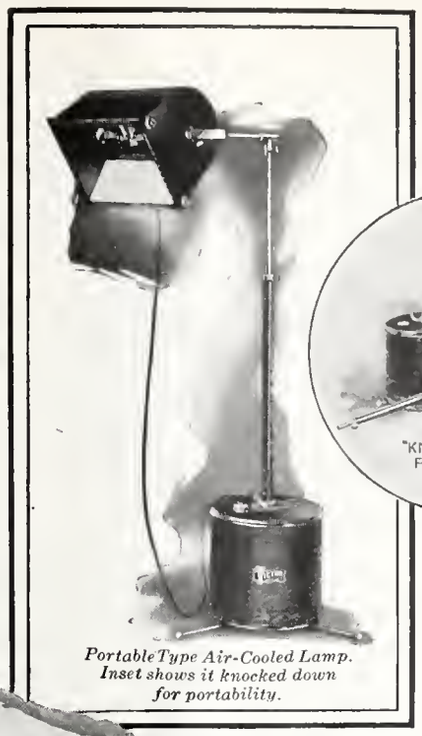
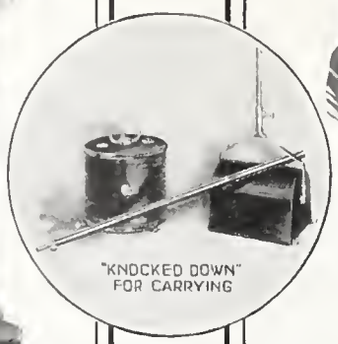
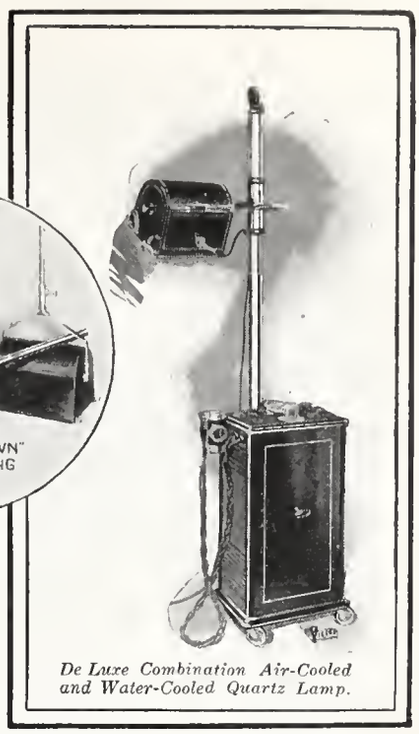


Portable Type Air-Cooled Lamp. Inset shows it knocked down for portability.





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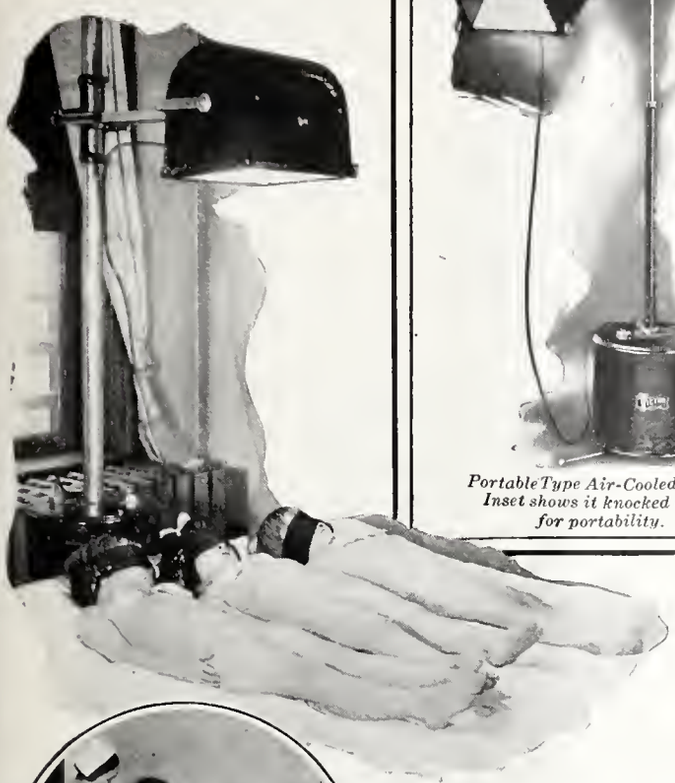

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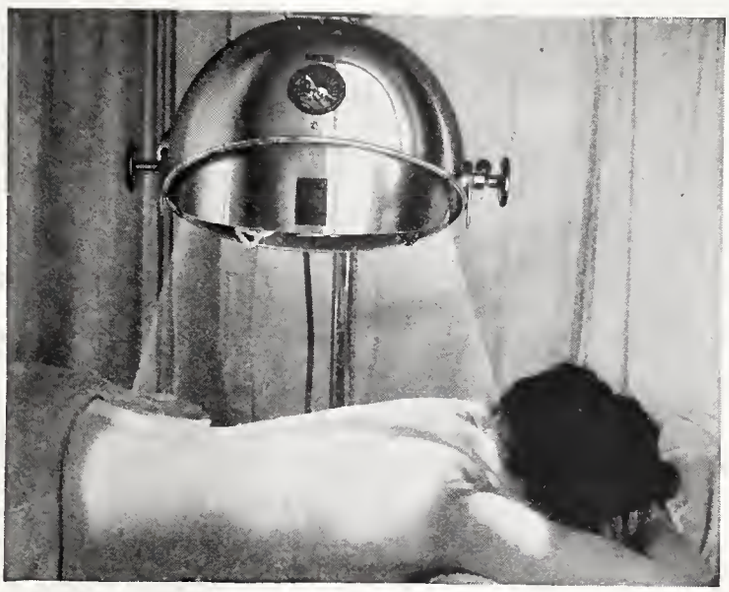

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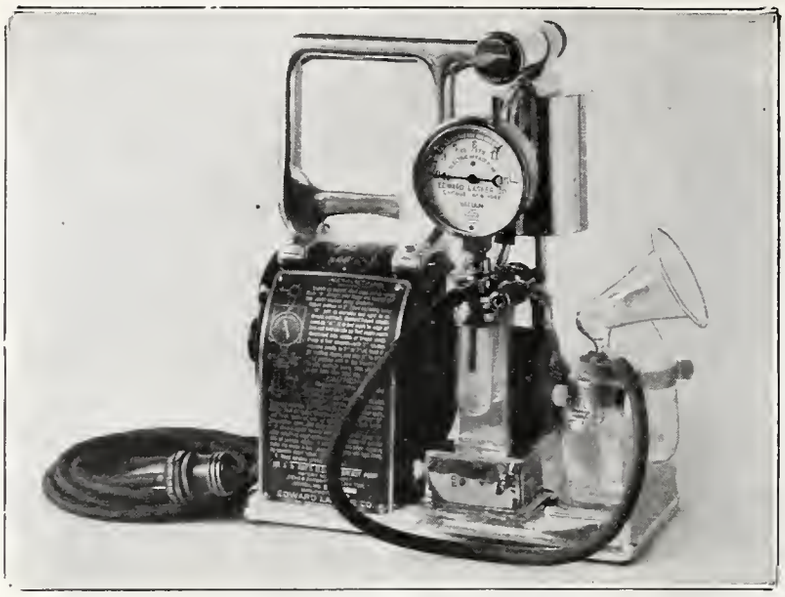

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"Only those clinical laboratories in which the space, equipment, finances, management, personnel and records are such as will insure honest, efficient and accurate work may expect to be listed as approved."

"The housing and equipment should be sufficient to permit all essential technical procedures to be properly carried out."

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"The director of an approved clinical laboratory should be a graduate of an acceptable college or university of recognized standing, indicating proper educational attainments. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry or other allied subjects, for at least three years. He must be a man of good standing in his profession."

"The director shall be on full time, or have definite hours of attendance, devoting the major part of his time to the supervision of the laboratory work."

"The director may make diagnoses only when he is a licensed graduate of medicine, has specialized in clinical pathology for at least three years, is reasonably familiar with the manifestation of disease in the patient, and knows laboratory work sufficiently well to direct and supervise reports."

"The director may have assistants, responsible to him. All their reports, bacteriologic, hematologic, biochemical, serologic and pathologic should be made to the director."

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"Indexed records of all examinations should be kept. Every specimen submitted to the laboratory should have appended pertinent clinical data."

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"Publicity of an approved laboratory should be directed only to physicians either through bulletins or through recognized technical journals, and should be limited to statements of fact, as the name, address, telephone number, names and titles of the director, and other responsible personnel, fields of work covered, office hours, directions for sending specimens, etc., and should not contain misleading statements. Only the names of those rendering regular service to the laboratory should appear on letter-heads or other form of publicity."

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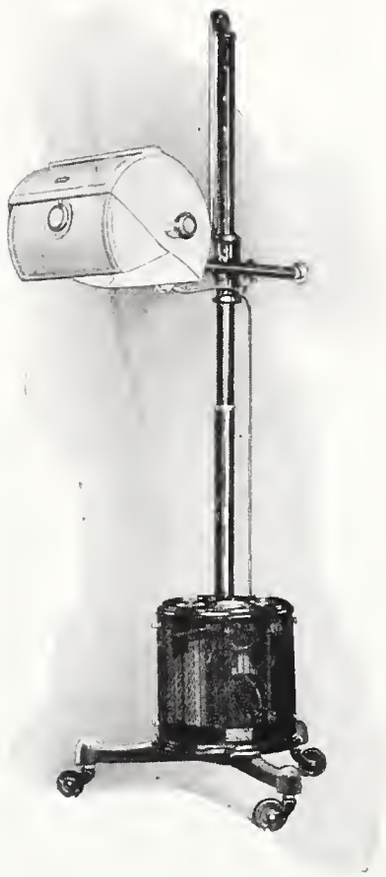

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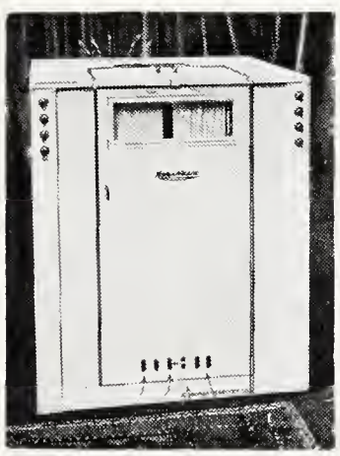

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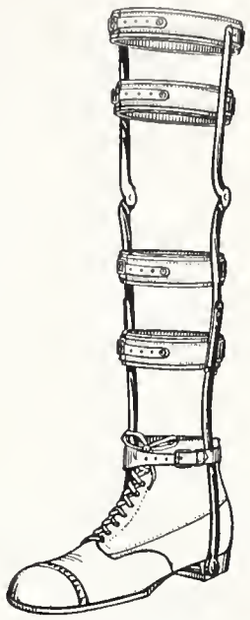

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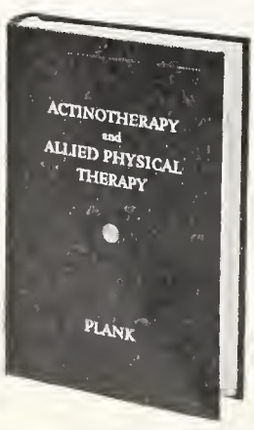

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BOOK REVIEWS

Radium in Gynecology. By John G. Clark and Charles C. Norris, with a chapter on physics by Gioacchino Failla. Pp. 311. Illustrated. Philadelphia and London: J. B. Lippincott Company, 1927.

A very comprehensive review of the personal experiences with radium in gynecology, gathered by Clark and Norris over a period of years from their private and clinical material at the University of Pennsylvania. The monograph opens with an excellent historic survey of irradiation. Gioacchino Failla has contributed the chapter on the physics of radium. In spite of some very technical discussions in this chapter, the subject is presented in a sufficiently simple manner to be understood by anybody having a foundation in the mathematical and physical sciences. This chapter alone is worth the price of the book to those who utilize radium in medicine.

In the following chapter the effect of radium on the various organs is discussed in detail. Of particular interest is the chapter on malignant tumors of the cervix, for it deals with the intrinsic details of treatment developed particularly by the authors.

Comparative studies of end-results of other authors are discussed. One misses greatly a frank survey of the 530 cases of cervical cancers studied at the University of Pennsylvania. The few cases reported here and there could well have been omitted.

The discussion of treatment of myomata by radium and operation, while presented ably, falls short for the same reason.

As a general survey of radium treatment in gynecology, the monograph is very commendable. It is unfortunate that the large material has not been utilized to better advantage by a presentation of the end-results.

L. A. E.

Clinical Laboratory Procedures. By George L. Rohdenburg. Pp. 266. New York: The Macmillan Company, 1927.

The author has accomplished the purpose stated in the preface: namely, that of producing a collection of laboratory methods and useful diagnostic procedures.

There is evidence throughout the book of an endeavor to include essential information unobscured by more than indispensible explanation and comment. The task of deletion without important loss is a difficult one and the result in this instance has been accomplished with considerable, although not entire, success.

While questions of individual opinion and preference must arise, nevertheless the selection of methods and data is, with some exceptions, a good one, and the rather unusual accessibility of specific information afforded by the book make it valuable as an aid for quick reference.

H. A. W.

An Introductory Course in Ophthalmic Optics. By Alfred Cowan. Pp. 262. Illustrated. Philadelphia: F. A. Davis Company, 1927. Price, $3.50.

This book by Dr. Alfred Cowan is truly an introductory course into optics. Up to the present there has been no textbook on optics which did not demand a fairly full training in higher mathematics. In this work, however, this side of the subject has been simplified as much as possible. While some algebraical formulas are included they are of a simple nature and only those absolutely necessary for an understanding of the subject are presented, so that this treatise is really a good introductory course into optics.

This book has more than a theoretic value in that it takes up the practical part of refraction as well, including a discussion of lenses of various types as well as the optic system of the eye with its various variations, such as myopia, hypermetropia, and astigmatism. The chapter on ophthalmoscopy is very interesting and would be of value to everyone who does any ophthalmoscopy. Mechanically the book is excellent with its good printing and diagrams done in two colors, black and red. D. K. P.

Manual of the Diseases of the Eye for Students and General Practitioners. By Charles H. May. Twelfth edition. Pp. 445. Illustrated. New York: William Wood and Company, 1927. Price, $4.

The twelfth edition of this classic Ophthalmology has appeared. It is in its essentials merely a reprint of previous editions.

A few paragraphs on the slit-lamp and corneal microscope have been added. The conclusions reached on this subject are as follows: "Examination with the slit-lamp represents a comparatively new technique; it requires considerable practice, and being new, necessitates experience in the interpretation of the examination findings. The apparatus required is elaborate and expensive, but is a necessary part of the equipment of the expert ophthalmologist; the information which it furnishes is very useful, and most interesting, but the method is scarcely suitable for the beginner in ophthalmology."

Some of the newer drugs and operations used in glaucoma are either not treated at all or barely mentioned, but this is probably a virtue rather than a fault, as it is questionable whether any of them will retain a permanent place in the therapy of the disease.

Two English ophthalmologists, Humphrey Neame and

(Continued on next page)

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BOOK REVIEWS

(Continued from previous page)

F. A. Williamson-Noble, have written "A Handbook of Ophthalmology," published in 1927. It is liable to supplant May's book in some of the medical schools on account of the superiority of its illustrations, although the older book has also been improved somewhat in this respect.

G. N. H.

Clinical Diagnosis by Laboratory Methods. A Working Manual of Clinical Pathology. By James Campbell Todd and Arthur Hawley Sanford. Sixth edition. Pp. 748. Illustrated. Philadelphia and London: W. B. Saunders Company, 1927. Price, $6.

The co-authorship of Sanford of the Mayo Clinic is a welcome accession to this edition. Although Sanford's entry is as yet not very pronounced, future editions are promising.

The work is essentially conventional and simple. Considerable material—relics of bygone textbooks that are today of little or no clinical moment—is still presented. The chapter on the microscope and its handling, as in previous editions, is well worth the attention of even experienced laboratorians. A fuller dark-field technique might enhance it.

There is new material throughout the book. Blood chemistry is fairly complete, although reference to other works is made for calcium and phosphorus determinations. Considerable space is given to physical properties of the erythrocyte. Urobilin and hepatic function tests are fully presented.

The revision on the chapter on animal parasites is to be especially commended. Classification and text are concise and photographs are numerous and clear.

In the chapter on complement fixation test for syphilis too many obsolete methods are given; fortunately Kolmer's technique is given due prominence and completeness, and the Kahn flocculation test is not slighted.

E. A. V.

X-Rays and Radium in the Treatment of Diseases of the Skin. By George M. MacKee. Second edition. Pp. 788. Illustrated. Philadelphia: Lea and Febiger, 1927.

The publication of a new edition of MacKee's "X-Rays and Radium in the Treatment of Diseases of the Skin" is an event of importance in the field of medical literature. The general plan of the first edition has been maintained and, in addition, all the latest developments in the field have been added. An historical outline of the development of roentgen-ray therapy and radium therapy is followed by a comprehensive discussion of the physics involved. A number of chapters are devoted to a description of the various types of apparatus available and to general principles of treatment, including a complete exposition of the author's system of x-ray dosage. This method of estimating x-ray dosage, especially as applied to the unfiltered radiation usually used in the treatment of skin affections, has superseded all others among dermatologists.

The last half of the book is devoted to a discussion of the conditions which may be treated satisfactorily by radiotherapy. This portion is of particular value because each condition is considered from the dermatological standpoint primarily and the value and limitations of radiotherapy discussed dispassionately, with no special brief for one particular form of therapy. The dangers of this form of treatment are stressed, and all the latest protective methods for both the patient and the physician are presented. This book is unique as a complete and authoritative guide to radiotherapy in dermatology, and is so arranged and indexed as to be a usable reference for the physician who only occasionally treats skin conditions.

L. T.

Cancer of the Larynx. By John Edmund MacKenty. Pp. 63. Illustrated. New York.

The subject of carcinoma of the larynx is monotonously interesting, despite the brilliant results obtained by a few laryngologists and surgeons. A recent article by MacKenty attempts to relieve this monotony by offering radical surgery as more than a mere straw of hope for the recovery of the patient. The surgical technique offered is complete and lucid, but does not differ greatly from the usually accepted methods. The main advances are early attention to the hygiene of the mouth, teeth and pharynx, extreme care in the prevention of secretions and blood from entering the tracheobronchial tree during and after the operation, diminution of operative trauma and the institution of adequate drainage of the operated area.

In addition to the sections devoted to the description of the surgical technique and the presentation of the postoperative results the monograph contains several points of interest. The historical introduction is not remarkable. The comparison of the various operative procedures other than total laryngectomy is presented in a somewhat biased manner. The indications for operative

(Continued on Page 608)

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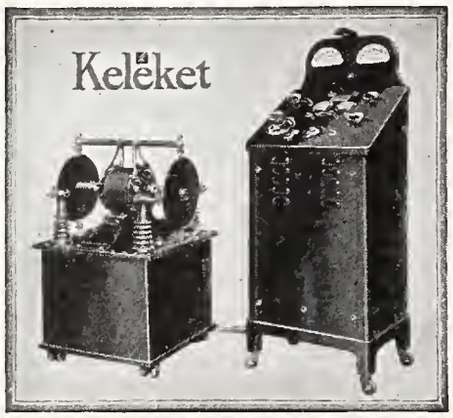

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BOOK REVIEWS

(Continued from Page 606)

interference as specified by Gluck are not tenable in the mind of the author who believes that nothing short of the radical operation is sufficient.

The section devoted to the diagnosis of carcinoma of the larynx stresses the importance of early, careful, repeated and unbiased observation, with notes and sketches of these observations. The plea for early diagnosis is made again, in that too many cases pass from the hopeful intrinsic stage to the hopeless extrinsic state as the result of neglect on the part of the patient to seek early medical advice or inability on the part of the medical advisor to recognize the cause of the complaint. The author might well have gone a step farther and recommended that all cases of hoarseness of three weeks' duration in an adult demand the services of a competent laryngologist. Biopsy is considered to be of secondary value as an aid to diagnosis, and its value is further limited by saying "we realize that biopsy is often badly done; a surface specimen only being secured, leaving behind the characteristic pathology which lies at the base of the neoplasm." It would seem that a laryngologist who is competent to make careful, repeated and unbiased observations of a neoplasm in the larynx should be equally competent to obtain adequate tissue for microscopic examination. A larynx should present sufficient histopathological evidence of malignancy prior to or at the time of operation to warrant its removal in toto. It is unfortunate that the value of biopsy should be so underrated.

The section devoted to etiology is short, and justly so. The belief that carcinoma is a constitutional infection or condition and that the local manifestations are determined by some continuously applied irritation is interesting if true. The present status of our knowledge does not permit one to make many valid statements on the subject of etiology of carcinoma. The bulk of the available experimental data is diametrically opposed to this view.

The series of cases presented is impressive in that it comprises a total of 130 cases of which 22 were thyrotomies, 6 hemilaryngectomies, and 102 total laryngectomies. The results of the operative procedures are equally impressive. After a two-year period seven out of the twenty-two thyrotomies remained free from recurrence. Four of the six hemilaryngectomy cases operated prior to 1917 showed recurrence. Of the 102 total laryngectomies seventy-nine are classed as cured after a three-year period. The remaining twenty-three cases are accounted for by two surgical fatalities, ten recurrences, and eleven arrested cases. L. F. M.

Blood Pressure—Its Clinical Applications. By George William Norris, Henry Cuthbert Bazett and Thomas M. McMillan. Fourth edition. Philadelphia: Lea and Febiger, 1927.

The first two chapters are a discussion of the mechanics of blood pressure and blood flow; they would do credit to a standard physiological text, and are much superior to the corresponding chapters appearing in many books on blood pressure. The descriptions of instruments and technique are the conventional ones, and might with profit be critically amplified somewhat. For example, lengthy descriptions are given of the auscultatory method and the "visual" (oscillatory) method, and under "standard technique," the directions are for the exclusive use of the auscultatory method—not a word about the original simple (and preferable) palpatory method for systolic readings. And yet two pages devoted to the "personal equation of the examiner" refer only to the palpatory method! No mention is made of important contributions which have appeared emphasizing the considerable personal equation involved in the use of the visual and auscultatory methods; and there are only a few words on the "silent phases," which really constitute a very serious objection to the exclusive use of the auscultatory method for systolic readings.

A number of functional circulatory tests are described, but without much attempt to analyze critically their merits.

Essential hypertension and hypotension, as well as pressure phenomena in various circulatory and other diseases are considered. E. S. K.

An Introduction to Clinical Perimetry. By H. M. Traquair. Pp. 264. Illustrated. St. Louis: C. V. Mosby Company, 1927. Price, $13.50.

The author has presented this subject in a practical and useful manner. Commencing his discussion he seeks to avoid abstruse discussions, limiting his remarks to that which would be of use to the clinician. The book is divided into two parts, the first part of four chapters being concerned with the normal field of vision, the different perimetric instruments, methods of examination, and a review of the physiology. The author has not limited his discussion to the instruments or to the methods which he personally uses, but has described a great variety of them, though he usually indicates which he considers the most practical.

In the second part he takes up the pathological changes in the visual field. He first describes the various types of pathological fields, next the interpretation of changes of the field in relation to the chorioid and retina, glaucoma, the optic nerve, the chiasma and the suprachiasma

(Continued on Page 610)

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BOOK REVIEWS

(Continued from Page 608)

pathway. He also includes a chapter on functional changes in the field of vision.

The book is profusely illustrated with many excellent drawings and reproductions of fields, the latter being especially well reproduced in a work of the quarto size. While Traquair does not go into many abstruse discussions on the subject he takes up perimetry thoroughly so that anyone reading the book can become well grounded in the subject. It is thus eminently a book for the practicing ophthalmologist. D. K. P.

The Extra-Ocular Muscles. A Clinical Study of Normal and Abnormal Ocular Motility. By Luther C. Peter. Pp. 294. Illustrated. Philadelphia: Lea and Febiger, 1927. Price, $4.

This volume is, as the author states, an amplification of lectures which have been given in the Graduate School of Medicine at the University of Pennsylvania. The fact that the material in the book has been prepared for teaching purposes is reflected in the manner of presentation, and the reader is the gainer thereby.

In the matter of extra-ocular muscles the majority of us stand as students and are grateful for the author's assumption of our ignorance.

The important sections on anatomy and physiology alone will clarify the ideas of many who read them, and we are led gently into the practical sections on heterophoria, heterotropia and paralytic squint from which each reader will surely receive a new viewpoint, or, at least, a better correlating of his clinical experiences as he sees each muscle imbalance grouped and the clear indications for treatment pursued. Many will not agree with the author's radical stand on tenotomy although appreciating his reasons.

The section on paralysis is excellent and the diagnosis of diplopia the best we have seen. If we could find any one fault, it would be that it leaves the reader with the impression that the question of extra-ocular muscles is a much simpler one than it really is in practice. In spite of this, which may have its value, the whole book is an example of clear thinking and marshaling of facts in logical order. It does not take the place of the many excellent books already published but which are narrower in their scope, and will stimulate most certainly a keener interest in this rather neglected field. Altogether, it is a book which many will want to possess and refer to constantly. H. G. S.

Diagnosis and Treatment of Diseases of the Stomach with an Introduction to Practical Gastro-Enterology. By Martin E. Rehfuss. Pp. 1236. Illustrated. Philadelphia and London: W. B. Saunders Company, 1927.

This work of over 1200 pages will prove a valuable reference book for both the general practitioner and the gastro-enterologist. There are chapters on anatomy and physiology of the stomach, a rather too lengthy discussion of methods of diagnosis, especially gastric analysis. The chapters on the various diseases of the stomach are well presented, then follow chapters dealing with the gastric manifestations of extrinsic disease, and finally, chapters dealing with the surgical, medicinal and dietetic methods of treating gastric disease.

On the whole the work represents a careful correlation of the literature to date with the author's own experiences and, although the volume is unnecessarily long and could have been condensed without losing any of its real value, it makes interesting and profitable reading. W. W. B.

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The Medical Department of the United States Army in the World War. Vol. VII. Training. By Colonel William N. Bispham, M. C. Prepared under the direction of Major General M. W. Ireland, the Surgeon-General. United States Government Printing Office, Washington, 1927.

The Medical Department of the United States Army in the World War. Vol. XIII. Part one, Physical Reconstruction and Vocational Education. By Major A. G. Crane, S. C. Part two, The Army Nurse Corps. By Julia C. Stimson. Prepared under the direction of Major General M. W. Ireland, the Surgeon-General. United States Government Printing Office, Washington, 1927.

Practical Dietetics in Health and Disease. By Sanford Blum, M. D. Third revised and enlarged edition. Review copy by courtesy of the publishers, F. A. Davis Company, Philadelphia.

Diabetes—Its Treatment by Insulin and Diet. A Handbook for the Patient. By Orlando H. Petty, M. D. With

(Continued on Page 612)

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fession throughout the world. Edited by Henry W. Cattell, M. D. Vol. 1, Thirty-Eighth Series, 1928. Review copy by courtesy of the publishers, J. B. Lippincott Company, Philadelphia.

Physical Diagnosis. By W. D. Rose, M. D. Fifth edition. 310 illustrations and 3 color plates. Review copy by courtesy of the publishers, The C. V. Mosby Company, St. Louis.

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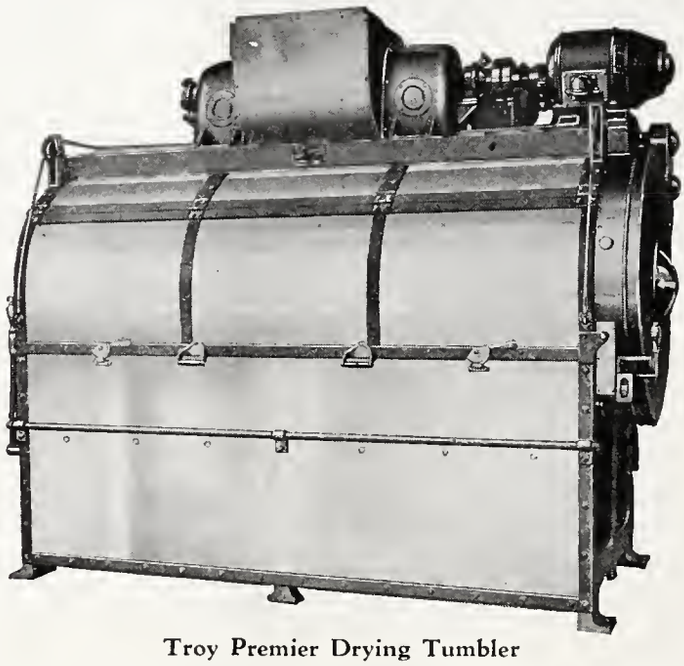

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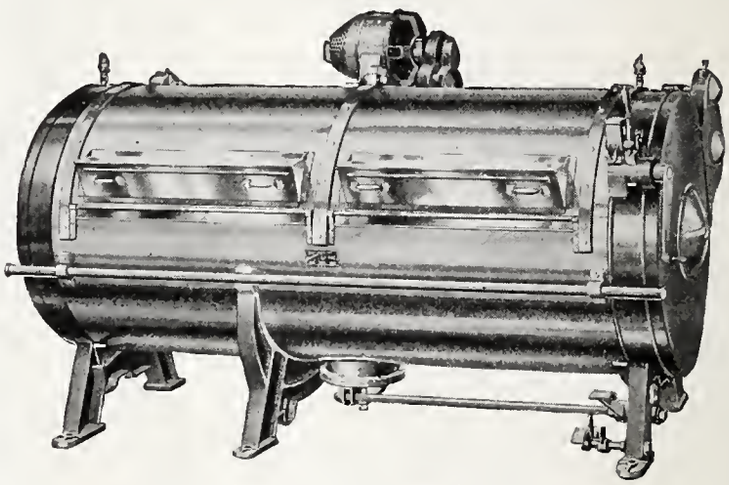

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The Tuberclecide Fraud—Charles F. Aycock, "Consumption Cure" faker, has been debarred from the mails. He has for years sold a fraudulent "cure" for consumption called "Tuberclecide." This nostrum was exposed seventeen years ago; at that time Tuberclecide sold at $15 for a two-ounce bottle and was found

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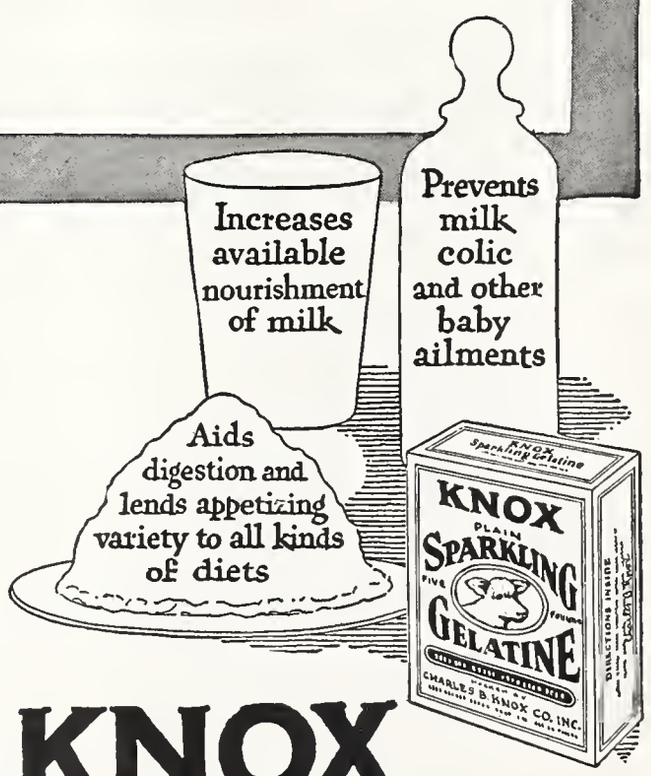
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TRUTH ABOUT MEDICINES

(Continued from Page 616)

Pancrepatine—The Anglo-French Drug Company, which markets "Pancrepatine A. F. D.," has not requested an examination of the preparation by the Council on Pharmacy and Chemistry. "Pancrepatine A. F. D." is stated to be "a combination of a Special Extract of the Pancreas and Hepatic Extract. . . ." It is claimed that the oral administration of the preparation results in "Reduction of Glycemia" and "reduction and sometimes total disappearance of glycosuria." There is no convincing evidence to show that any preparation taken by mouth is an effective means of producing the characteristic action of insulin.—*Jour. A. M. A.,* March 3, 1928, p. 714.

Auriculator not Acceptable—The Council on Physical Therapy reports unfavorably on the Auriculator, submitted to the Council by Dr. Maury M. Stapler, Macon, Georgia. It is stated to be a device for treating certain classes of deaf-mutism. The apparatus is a slightly different adaptation of a principle that has long been employed in the treatment of tubotympanic adhesive processes. The Council declares the Auriculator inadmissible for inclusion in the list of devices for physical therapy which are acceptable (1) because no scientific evidence has been presented to warrant the claim that it can be used successfully in treating deaf-mutism and (2) because the descriptive material submitted with the device contains unscientific and incorrect statements as to the causes of deaf-mutism.—*Jour. A. M. A.,* March 10, 1928, p. 767.

Barbital Addiction—The wide use of hypnotic preparations by the public has brought new problems for solution. When a single practitioner can report a hundred cases of acute poisoning or chronic addiction with one of the newer hypnotic drugs, the situation is

(Continued on Page 625)

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TRUTH ABOUT MEDICINES

(Continued from Page 622)

serious. Barbital, introduced as veronal, has an increasing lay popularity for self-administration. Its habit-forming propensities are sufficiently well recognized to merit the special designation of barbitalism or veronalism. A host of proprietary hypnotics now on the market may induce in greater or less degree the same result. Addiction to barbital appears not to stop with the production of moderate euphoria. Judgment, orientation as to time, and insight are probably the most severely harmed of the psychic faculties and are the last to clear up in convalescence. The "safe" hypnotics may become menacing to the public welfare.—*Jour. A. M. A.,* March 10, 1928, p. 769.

Vitamins A and D in Cod-Liver Oil—Accumulated evidence seems to have established the fact that vitamin A is not identical with the antirachitic factor; as a consequence, vitamin D has been postulated. Work has been published which shows that some cod-liver oils, rich in vitamin A were poor in vitamin D and that others rich in vitamin D were poor in vitamin A. The importance of this matter may be appreciated when it is pointed out that some commercial firms whose products have a satisfactory vitamin A content claim, *ipso facto,* a satisfactory content of the antirachitic factor vitamin D. The Council on Pharmacy and Chemistry has previously attacked this fallacy. In the new section on Vitamin Foods to appear in the chapter on Medicinal Food in New and Nonofficial Remedies, 1928, the Council states that it does not feel justified in requiring any specific test or standard of antirachitic potency, but it announces the policy of encouraging manufacturers to adopt and publish such methods of testing as will enable them to guarantee a vitamin D potency for their products. For products admitted to New and Nonofficial Remedies the Council permits no claim of vitamin potency

(Continued on Page 697)

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CALIFORNIA
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WESTERN MEDICINE

VOLUME XXVIII MAY, 1928 No. 5

NARCOTICS

By Percy T. Phillips, M. D.
Santa Cruz

PRESIDENTIAL ADDRESS, CALIFORNIA MEDICAL ASSOCIATION, FIFTY-SEVENTH ANNUAL SESSION

BLACKSTONE said: "If man were to live in a state of nature, unconnected with other individuals, there would be no occasion for any other laws than the law of nature and the law of God."

It is certainly an innovation to preface an address before a State Medical Association with a quotation from Blackstone's Commentaries. As an introduction to what I hope will be a practical discussion of narcotics, and the laws now governing their use in California, it is desirable to start with the philosophy of all law.

Not to perplex the law of nature with a multitude of abstracted rules and precepts as to the fitness or unfitness of things, the rule of obedience is reduced to this one paternal precept, "that man should pursue his own true and substantial happiness." This is the foundation of what we call ethics or natural law. This law of nature dictated by God himself is, of course, superior in obligation to any other. Human laws, to be reasonable and valid, must derive their authority from this source.

NARCOTICS POWER FOR GOOD AND EVIL

"That man should pursue his own true and substantial happiness," our government has found it necessary from time to time to enact special codes regulating the use of God's gifts to mankind that humanity in its ignorance and carelessness abuses. There is no more outstanding example than opium —and other narcotics—one of God's great blessings, but capable, if not properly used, of being man's greatest curse.

I shall not discuss the physiological action of or the therapeutical indications for narcotics, but shall emphasize only their dual results. We shall take opium with its derivatives as an example. No single medicinal agent has been so useful and none more destructive. We can all count the lives actually and definitely saved by its use in our hands—the case of extreme surgical shock where only morphin could defend the vital nerve centers: the one of severe inflammation of some internal organ that only morphin could put to rest and thereby save from destruction. Probably its greatest blessing is in the case of incurable disease with its intense and continued suffering, worse than death itself, which only by the use of opiates is made endurable while life lasts. These are outstanding examples; there are many others.

On the other hand we count the wrecks of both body and soul that have come under our observation. Let us recall to our minds an incident that is repeated many times in the professional lives of us all. A man, once proud and independent, endowed with all the mental and physical attributes to make him a leader among men, but now a pitiable creature without pride or confidence, comes to our office asking for a few grains of morphin. At first he brazenly lies to us about some serious physical ailment necessitating its use. When we refuse his demands and accuse him of addiction and ask him to tell us his true story, he sits down and relates the incidents along one of the many paths, familiar to us all, that has led him to a condition which places him, if he can obtain the drug, for a time in the seventh heaven, or without it, plunges him into the depths of hell. In either condition his moral sense and responsibility are gone, his physical powers are depleted, and he is but a menace to, as well as a burden on the body politic. As we shall see, a big percentage of all crimes against God's and nature's laws, as well as against those special codes promulgated by our state for our comfort and protection, are traceable to the abuse of narcotics.

The problem of narcotics is logically one for the medical profession. We must strive to develop their power for good and suppress their power for evil. While those in authority administer such restraints as are imposed, it is our province to recommend the best laws and best means to control their use and abuse. This is our duty to the commonwealth because we have intimate knowledge of the legitimate use of narcotics, as well as experience based on the care of those who are its addicts.

We are accused in some cases of causing addiction by unnecessary or careless prescribing. While there are instances of addiction following the imperative prescribing of narcotics, they are so rare as to be practically negligible. We cannot know when we are saving a life with morphin that the particular individual is so constituted that he lacks the control a normal person inherently possesses. The contempt of one's confrères for a physician who would needlessly or carelessly expose a patient to addiction is so profound that no physician, unless he has fallen from every ideal of medical service, would face its wrath. After all few physicians in the face of mankind's constant need can fail to ask themselves, "Am I not always my brother's keeper?"

HISTORY OF ADDICTION

Narcotic addiction is not a new problem. The use of the cocoa leaf, Indian hemp, and the juice of the poppy, goes back to the beginning of history. Webster gives the derivation of the word

"assassin" as from hashish, or one who has drunk of the hashish, a narcotic preparation made from hemp. Modern civilization has made narcotic drugs both its blessing and its curse.

As far back as we go in recorded history, the evil resulting from the use of narcotics has been recognized. In 1788 a great Englishman, Warren Hastings, declared opium to be "a pernicious article of luxury, which ought not to be permitted but for the purpose of foreign commerce only."

Three decades later the directors of the East Indian Company went on record as saying: "If it were possible to prevent the use of the drug altogether, except strictly for the purpose of medicine, we would gladly do it in compassion to mankind."

As a result of the opium war, England opened the doors of China to the opium traffic and levied an indemnity of six millions of dollars for opium which the Chinese had seized and destroyed. This was followed by an awakening of the conscience of the English people which was again lulled to sleep by the cleverly contrived report of the Royal Commission of 1893. Naturally, after spending months in hearing the evidence and opinions of the merchants engaged in the opium traffic, they found much good and little harm in the use of narcotics by Orientals.

The United States came into the picture through the interest taken in the problem by the late President Roosevelt. This led to the International Conference, held at The Hague in 1912. Sixteen years have passed since the countries represented at The Hague conference agreed to limit the manufacture, sale, and use of narcotic drugs to legitimate purposes, years filled with long speeches and pious platitudes, smoke-screens and camouflage, years marked by a steady increase in the production and illegal use of narcotics, years which saw constantly augmented forces in the unholy army of smugglers, drug peddlers, and addicts. The great powers have given their word. They have signed treaties. They have adopted laws and regulations. Why have they failed? There are at most not over fifty drug factories throughout the world. Why have these not been controlled? The answer is simple. Some of these sovereign nations have failed in observing the provisions of the treaties and in administering their laws and regulations.

We of America must protect ourselves from this unholy traffic. We must no longer look to foreign powers to protect us. These countries in whom a part of their population has not as yet realized the evils of addiction and whose vision is obscured by the fact that an appreciable part of their revenue is still from traffic in narcotics offer us little security. We must depend upon ourselves.

We of California must protect our state and its citizens. We must not lay too much of the burden upon our Federal officials. We must realize our own responsibilities and our own obligations.

DEMAND AND SUPPLY

Our narcotic problem can be broadly divided into two parts, that of the demand and the supply—the buyer and the seller. Let us consider first the supply. Both the Federal and state governments concern themselves with this half of the problem. The Harrison Narcotic Act and Drug Imports and Exports Act have furnished our Federal narcotic officials with powerful weapons with which to combat the traffic, and it is largely due to these laws and the faithful and efficient enforcement of them that the number of our addicts has decreased to approximately one hundred thousand throughout the United States.

The State of California has lent powerful aid to the Federal government through the drastic laws aimed at the peddler passed at the last two sessions of our legislature. In 1925 the penalty for illegal possession of narcotic drugs was increased from ninety days in jail or $200 fine to six years in state's prison for the first offense and ten years for the second offense. This drastic law has resulted in the elimination of a largely increased number of peddlers who, under the old law, escaped with a fine which virtually amounted to a license.

In accordance with Senate Concurrent Resolution No. 22 of the 1925 Legislature, a State Narcotic Committee was appointed to make a thorough and exhaustive study into the use and abuse of narcotic drugs in California and to recommend measures for the treatment and rehabilitation of drug addicts. This exhaustive and well-written report was published in the fall of 1926.

CALIFORNIA LAWS REVISED TO CONTROL TRAFFIC

As a result of this report with its recommendations, various new laws and amendments to those already existing were passed by the 1927 Legislature, aimed at the drug peddler and illegal trafficker. It has been stated by an official in the Federal Narcotic Division at Washington that California now has the best narcotic laws dealing with the illegal traffic of any state in the union.

One of these changes in the statutes, made by recent legislation, is of such special interest to physicians that it justifies a brief discussion. Ambulatory treatment for addiction is now positively prohibited. Should a physician furnish an addict, except there be pathology, narcotics in any amount except in a jail, county hospital or other institution approved by the Board of Medical Examiners for the treatment of addicts, he is subject to arrest and conviction with a severe penalty. Furthermore he may be cited forthwith to appear before the Board of Medical Examiners and show cause why his license should not be revoked. In the past, revocation of license for the violation of state and Federal narcotic law as a crime involving moral turpitude depended upon conviction in the courts. Now, the board, independent of court action, on complaint must cite a physician and revoke or suspend his license on the fact being established that he has furnished an addict narcotics. The board may revoke or suspend his license even should a court find him not guilty, if, in the board's judgment, the evidence presented justifies the belief that he is an unsafe practitioner.

There is one other provision of the law which

we must not forget. That is the reporting of so-called medical addicts. There are those who, through the infirmities of old age or incurable disease, must use narcotics continuously, and it is our duty to furnish them. We must, however, report each case to the Board of Pharmacy on a complete questionnaire. This includes the name, address, disease suffered, amount of narcotic prescribed, etc. This provision of the law seems to conflict with the age-old principle in law of privileged communication. Inasmuch as these reports become public documents, no procedure on the part of the Board of Pharmacy can protect them from inspection by any citizen who can show reasonable cause. Confidential relationship prevails in all professions and in none should it be more strictly adhered to than in ours. I do not know that the question of conflict has ever been raised. Should it be, it is a question for the courts to decide. We can readily see the reason for this provision and its desirability from the standpoint of narcotic enforcement. Its justification is contained in the following quotation from California jurisprudence: "It is within the general power of a government to preserve and promote the public welfare even at the expense of private rights." This power is made effective through the exercise of what is generally known as "police power." "The police power, deriving its existence from the rule that the safety of the people is the supreme law, justifies legislation upon matters pertaining to the public welfare, the public health or the public morals." Probably since the need is so great the law is justifiable and we should do our part in administering it.

The State Poison Act, as amended, provides for a Narcotic Division with a Director thereof. This wise provision appeals to the medical profession inasmuch as in all their duties and relations under this act the physicians will be dealing with one having special knowledge of the subject and thus better able to understand our problems in relation to the use of narcotics.

CALIFORNIA LAWS TO CONTROL ADDICT

What has California done with regard to the second part of the problem—the buyer, the drug addict? The Federal government refuses to concern itself with this important part of the question, claiming it is the responsibility of the states. Various congressmen have tried in vain to enact laws requiring the Federal government to assume responsibility in the care and treatment of addicts, but without success. At the session preceding the last session of Congress, Senator Shortridge introduced S. B. 1800, a bill which would require the Federal government to extend financial aid to worthy state narcotic institutions, but it failed.

At this session Congressman Porter of Pennsylvania has introduced a bill providing for the creation of two Federal narcotic farms for the confinement and treatment of addicts sentenced to our Federal penitentiaries. The separation of addicts from all other prisoners is a step in the right direction and may lead to a reversal of the present policy that the care and treatment of the drug addict is the business of the individual states and not of the Federal government.

Some years ago California passed a law permitting drug addicts to be sent to our state hospitals for treatment and cure. This experiment was a dismal failure. The mixing of unrestrained addicts with the mentally sick had an unfortunate effect on the patients, and the liberty allowed the addicts made it easy for them to continue to get narcotics. In the last report issued by the Department of Institutions, on page 118, we read that out of 295 drug addicts received for treatment in 1925 and 1926, only seven, or less than 3 per cent were discharged as cured. What happened to the others? A few died, 117, or 40 per cent, of them ran away, and the balance were discharged with the report "further treatment not beneficial."

In California today, the unfortunate addict who is without financial means has only two alternatives to choose from—the streets or the jails. The last session of the Legislature did pass a Narcotic Hospital law; a compromise in the sense that it falls between the present state hospital system which has proved such an utter failure and that excellent plan reported by the State Narcotic Committee and approved by the California Medical Association in convention at Oakland in 1926 in the following resolution:

"Resolved, That a plan which provides commitment of addicts after fair trial, to a farm from which escape can be made impossible, and which affords enlightened care, hospital cure, and work treatment, or other plans similar, equal or better, and under control of the California State Board of Health, meets with the approval of the California Medical Association."

The salient defects in the hospitalization law are: first, the Director of Institutions, a layman, with the approval of the State Board of Control, composed entirely of laymen, has complete control, and no physician has any authority, either direct or advisory unless a Medical Superintendent is provided; second, it is proposed to utilize the abandoned Pacific Colony building, located on the outskirts of Pomona, an accessible location too close to populous centers and very convenient for the drug peddlers; third, the plan provides for only fifty addicts in spite of the fact that we have some four thousand in the state; fourth, the bill provides no appropriation of money with which to carry out even its meager provisions and therefore practically vitiates its purpose.

The choice of location and the necessity of limiting the number of patients undoubtedly arose from the lack of sufficient appropriation.

The value of this proposed plan will depend on establishing a scientific organization with a competent medical staff that will study the pathological and psychological aspect of drug addiction, thereby collecting a fund of recorded facts of inestimable value in making its cure permanent.

Let me say that I respect and appreciate the motive and desire for service behind this act. It is an entering wedge and I hope and believe it will be so amended as to become of practical value.

California has today, according to our most authentic records, from 3500 to 4000 addicts. A census taken in the fall of 1926 shows some 1300

California addicts in jails, prisons, penitentiaries and institutions. They are going in and coming out at a nearly uniform rate. We have probably from 2500 to 3000 of the criminal or street type of addicts who gain their living and the money necessary for the purchase of the drug by begging, stealing, drug peddling, or other illegal methods. The Federal Narcotic Division at Washington estimates that the average quantity of morphin used by addicts is from six to seven and a half grains per day. The usual price in California for morphin is one dollar per grain. Therefore it costs the street addict on the average, approximately six dollars a day to maintain his addiction, and this is in addition to the necessities of life.

In the past few years we have heard much disturbing criticism leveled at the young people of our land. Emotional and superficial students of social conditions frequently include in their charges against the high school group of pupils an increasing use of narcotics. This widespread belief is far from the facts. The existence of such a condition is refuted by the investigation and report of the narcotic committee of the Commonwealth Club of San Francisco in 1926. If the findings of such a committee were not conclusive, the common sense of any citizen would recognize the impossibility of high school pupils maintaining without detection the cost of a six-dollar-a-day addiction.

The drug addict is one of the chief factors in our crime situation according to Dr. Carleton Simon, formerly Deputy Police Commissioner in charge of the narcotic division in New York City. Their reports show that of eight thousand addicts arrested in a given period, over 80 per cent were found to have previous criminal records. Francis J. Dunn of Philadelphia states that 85 per cent of their addicts have criminal records. Chief of Police O'Brien of San Francisco reports that the narcotic menace is the greatest problem that the police and other law-enforcing officers have to battle with at the present time. Chief of Police Davis of Los Angeles states that a large share of the crime committed in Los Angeles is due to drug addiction.

It is estimated by the State Narcotic Committee that the amount of money spent for narcotics by our criminal addicts alone varies from four to seven millions of dollars a year in California. This does not take into account the indirect cost of crime—the strain on our courts, jails, and institutions. Doctor Simon has records of 741 addicts who were arrested 5056 times and of 8174 addicts who were arrested 32,696 times. This gives us an idea of the appalling indirect cost of drug addiction to society and does not count the added cost through the waste of human production and the destruction and loss of man power.

SOURCE OF SMUGGLED NARCOTICS

Where do smuggled narcotics come from and what is the favorite drug of addiction?

Throughout the entire world there exist not over fifty drug factories, and they produce probably one hundred times the amount of narcotic drugs required for medicinal purposes. They are smuggled in through the Atlantic and Pacific seaboards and over the Mexican and Canadian borders. At present "the white stuff," as it is called, is coming largely from New York, and opium from the northern seaports. An analysis of the different drugs seized by our narcotic officials shows that morphin is the favorite drug of addiction in California, being captured in 86 per cent of the cases in northern California, and in a smaller percent of the cases in southern California. The large use of marihuana by Mexicans in southern California being responsible for the decrease in the percentage of morphin. Heroin, opium, and cocain were seized in a much smaller percentage of cases. The morphin captured is, in almost every case, morphin hydrochlorid, whereas the morphin manufactured by our American drug factories, carried in stock by pharmacists and prescribed by physicians, is morphin sulphate. This is conclusive refutation of the charge frequently made by those uninformed that there is a leakage of drugs from our American factories through corruption or inefficient supervision of our officials. We have every reason to believe that our smuggled drugs come, in every instance, from unscrupulous foreign factories which are interested only in the large profits made in this vicious commerce.

DENARCOTIZATION

During the past year so-called cures for drug addiction were widely heralded and discussed by the press, and many credulous people were led to believe that at last our narcotic problem had been solved. It was claimed that an addict could be cured of his addiction within a few days or weeks.

A public demonstration of one of these cures was given in San Francisco and what was the result? Thirty-six addicts were given treatments, successfully taken off the drug, and pronounced cured. Recently one of our narcotic officials undertook a check on the cured addicts. He could find only sixteen of them; the others had disappeared from San Francisco. Of the sixteen found, how many do you think had become re-addicted? Sixteen! Sixteen out of sixteen, that is the answer.

It is the same old story because that is not our narcotic problem at all. Every doctor and every institution has always succeeded in taking addicts off the drug, in denarcotizing them successfully. Even in jails where they let them "kick it out" or give them the "cold turkey treatment" they get results in nearly every case, but after that, what?

The so-called cured addict is turned out or discharged from jail and goes back to his old associates, to the old conditions which were responsible for his addiction in the beginning, to the old temptations, to the peddler who eagerly seeks to increase his trade, to the addict friend who sympathetically offers him a shot. Naturally, inevitably, sixteen out of sixteen went back to the drug.

REHABILITATION

At this point, after denarcotization, our real problem begins; the rehabilitation of the addict, curing the mind, the imagination. We have taken

away the chief thing in his life and given him nothing to take its place. Rehabilitation will take not days or weeks, but years. In a recent statement the British Ministry of Health says: "A lasting cure could not be claimed unless the addict had remained free from his craving for a considerable period—from one and one-half to three years after the final withdrawal of the drug."

In order to effect a cure of the addict, we must have him under absolute control for a long period of time. He must be completely isolated from his old life and associations, and some mental or physical occupation must take the place of the drug. This does not mean isolation by means of stone walls and iron bars. It means a normal out-of-door life, with sunshine, work and recreation.

The solution of this problem does not mean merely the cure of those addicted at present. It has a much wider scope. What are we doing to prevent the spread of leprosy? We segregate and isolate the lepers who are now at liberty on our streets. That is precisely what we must do with our addicts. Our late Doctor Musgrave frequently said that "Drug addiction is ten times as dangerous and ten times as contagious as leprosy," meaning, of course, contagion not physically but mentally through association.

The segregation and isolation of our addicts will not only prevent the present spread of drug addiction through association; it will do much more than that. It will destroy the demand for the drug. It will put the peddler out of business more effectively than a thousand narcotic agents. If it does not actually end the drug traffic in California it will reduce it to the irreducible minimum. The attempt to handle the situation by placing addicts in state hospitals, centers of large groups of people, always has failed and always will fail because complete isolation is impossible of attainment. Ideal locations for a state addict farm can be found in our California deserts or islands.

The complete isolation of not only a few but of all the addicts who can be found offers the only possible solution of this great social problem. There is no other way. We cannot depend upon foreign countries to protect us at an enormous financial sacrifice to themselves; we must protect ourselves. Federal, state and city narcotic officers have done their best to stamp out the smuggling of the drug into our country. With our thousands of miles of seacoast and Mexican and Canadian boundaries, they have failed, and I predict that the future will be a repetition of the past and present. They will always fail to prevent a large quantity of narcotics from being smuggled in, finding its way to our street peddlers and to our addicts who must have their daily dosage and will pay any price demanded for it.

There is no other way. We must segregate and isolate all the addicts who are now on our streets, creating the demand for the drug, paying the enormous profits exacted by peddlers, and, through association, spreading and increasing addiction among oncoming generations.

NARCOTIC PROBLEM A MEDICAL PROBLEM

The narcotic problem is partially, if not largely, a medical problem, and our profession has failed to realize and admit its obligation. We have left it too long to others; it is time to assume our share of the responsibility in the solution of this grave social problem.

It is not only a scientific and economic subject but a moral one as well. I wish to repeat; from a logical standpoint the medical profession should be more concerned than any other profession or class.

The profession of medicine is a structure with foundation laid deeply, with walls thick and strong, towering over other professions in its onward and upward building toward progress. It is a monument to the persevering efforts of the family doctor of early years; a castle to the modern physician, and it still stands stable and secure. It has been built and rebuilt and renovated, and each new triumph of the profession in its war on disease is its added illumination to be guarded as a beacon light which guides the younger physicians and lights their way to greater scientific efforts and warns them to keep intact our ideals and traditions.

"That man should pursue his own true and substantial happiness" there must be many civic as well as individual problems within the body politic. Let us as individuals and as a profession continue, as in the past, to give thought with service to all the problems of mankind.

Let us not forget that it has not been by scientific attainment alone that this structure has been erected. Wtih science have ever been morality, integrity, and service. A service ready to give battle not only for health, but for that righteousness that exalteth a nation.

Farmers and Merchants Bank Building.

STATISTICAL STUDIES AND MEDICAL EFFICIENCY*

By CHARLES EATON PHILLIPS, M. D.
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MEMBERS of the Surgical Section, California Medical Association, and Guests: You who have each achieved distinction in some department of surgery, who have so liberally contributed to its progress and scientific advancement, to you I desire to present a most serious problem.

Medicine as a science has made phenomenal advancement, yet its average application in surgery has shown a progressive loss.

Two years ago Dr. Willis of Richmond read a paper before the American College of Surgeons in which he quoted statistics showing that in the past two decades there had been a steady increase in the mortality rate attending many of the common surgical procedures. He showed that the mortality rate attending goiter operations had increased 250 per cent; operation mortality for gall

*Chairman's address, General Surgery Section, at Fifty-Seventh Annual Session of the California Medical Association, April 30 to May 3, 1928.

stones had increased 77 per cent; duodenal and gastric ulcers operation mortality had increased 72 per cent, and that for appendicitis had increased 31 per cent. Any doubt that might linger in one's mind should be dispelled by the figures later compiled by Carr and Deacon on "Appendicitis in Michigan." These studies show that the death rate varies considerably in different parts of the state. To quote: "In some counties no deaths occurred. In others it varies from 1 per cent and over. In only eight counties was it less than 5 per cent; in eleven it was between 5 and 10 per cent; in sixteen, between 10 and 14 per cent; in seventeen, between 14 and 18 per cent; and in ten, between 18 and 21 per cent. In ten it was 21 per cent or more." Compare these results, if you please, with those of Quain and Waldschmidt,[1] who report a thousand consecutive cases with a mortality of only 1.55 per cent, or with Tuttle's[2] summary of our work in Panama covering a period of nearly twenty years and comprising 3265 cases with a total mortality rate of 1.4 per cent. These two series totaling well over 4000 cases with an average mortality of less than 1.5 per cent may be taken as representative of the legitimate mortality attending the better class of surgery. Contrast these results with the approximately 15 per cent in an average state as analyzed by Carr and Deacon. The difference of 1000 per cent between the average and the good is too great. An analysis of the situation shows the difference is due to the degrees of professional ability. The constantly increasing volume of indifferent surgery is without question responsible for the rising mortality rate. The explanation is obvious. Where one practiced surgery twenty years ago, one hundred are endeavoring to do it now. In other words, the surgery of two decades ago was performed by comparatively few men. In spite of their lack of opportunity for study and observation, and the imperfections of hospitals and equipment, their results averaged better than those of today. These men were pioneers in this work and kept a close record of their results.

We unfortunately are accustomed to reckon the progress of medicine and surgery by the advancement made in a few of the well-known institutions.

The business man who reckons his yearly profits by a few fortunate transactions, without taking heed of the law of averages, is certain of final losses or even bankruptcy.

Because the profit in our transactions is computed in human lives saved, should not make the effect less worthy than if it were figured in dollars and cents.

We fail to recognize the fact that the volume of surgery is no longer performed by a few men, but at present it is practiced by a majority of doctors, and not even limited to doctors of medicine.

In the better class of hospitals a superior grade of surgery is being done to that of a decade or two ago. Because of the great influx of inexperienced and otherwise untrained men, a large amount of the surgery of today is performed by the unskilled. The amount of this work more than offsets the improvement effected by the efficient. The result is a steady deterioration of the general average.

This state of affairs has come about at the same time that marked improvement was achieved in the training of the young surgeon as well as in the facilities with which he has to work. The founders of the American College of Surgeons had in mind, in the formation of this great organization, the general benefit to the practice of surgery. The campaign of hospital betterment and standardization has been carried out with the same motive in view. The amount of good these agencies have accomplished cannot be estimated. The weakness of our system of healing lies in the fact that we have provided no sufficient protection against the incompetent and careless. While the representatives of this class are chiefly to be found outside of the regular profession the patient has too little means of determining this fact. The ability of a prospective surgeon is too frequently judged by his own unsupported statements. Whatever the doctor may lack in professional ability he can make up in imagination and by superior salesmanship—even rebates are not unknown!

In my opinion the most logical solution is to keep an accurate, unbiased record of each doctor's work and results. To render a maximum service to the patient as well as to the profession, the physician must know not only the results that follow his own endeavors, but he also must be familiar with the work and results of others.

The patient, whose health and life are at stake, should have an opportunity of knowing the doctor's actual experience and the success that has attended his previous work.

The method of collecting such data must be simple, efficient and economical. It should be done by the hospital and not by the individual physician. Many of our better hospitals are compiling their results by mechanical means, thereby insuring accuracy, economy and efficiency in their statistics. The efficiency of a hospital is no better than the average competency of its staff. Not over one per cent of the members of the profession keep an accurate, analytical record of their work. What per cent of the hospitals have made an adequate study of the individual results of its staff members? We know they are very few. Without individual statistics by the hospital and its staff there can be no collective data of value to the physician or to the patient, and it is with great reluctance that I must say that in this business of life and death practically no books are kept.

To compile results intelligently the individual cases must be classized. The surgical risk should be estimated. Dr. T. R. Ponton, formerly a representative of the American College of Surgeons, has arranged a simple classification of surgical

risks. This should be made in every case. For those who are not familiar with his classification, I will state he has divided surgical cases into three classes:

First: Elective surgical risks with a good, fair or bad prognosis.

Second: Emergency surgery, classified also as good, fair or bad risks.

Third: Palliative surgery, classified in a like manner.

A wise provision by the ideal hospital would be to require consultation before the contemplated operation in those cases where the patient's life is to be endangered. This provision would not necessarily be enforced in emergency work where the loss of time might be detrimental to the patient's chances of recovery. Such a procedure would not only safeguard the patient, but also the doctor in the eventuality of an unfortunate result.

The mechanical compilation of statistics enables each doctor to know his own results and also the average results of all others, but not the individual results of any save his own. The value of such records must be apparent to all. The worth of any surgical procedure could be determined promptly and in a convincing manner. Each would profit by the experiences of all.

An an example: Since an analysis of the work in the Los Angeles General Hospital has been made during the past two years, there has resulted a very marked stimulation of interest in their mortality showings and in the proportion of creditable results on the parts of the various surgeons. It seems only just that some form of recognition be accorded those institutions which require such an analysis of their work.

Compilation of vital statistics including all methods of treatment, show a steady deterioration of results. The better institutions have shown an improvement consistent with the advancement of medical science. This comparison constitutes the clinching argument against unpreparedness and quackery.

Financial institutions where only money is at stake are required to give a true statement of assets, liabilities, and the chance for gain to the prospective investor. Institutions of treating the sick are not surrounded by any such safeguards.

This has been the golden age of opportunity in medicine and we can do no more than pass to our successors a better organization than that we have received.

In conclusion, it is just that we exercise every precaution to safeguard the lives and welfare of the patients who trustingly place themselves in our care. To do this it is imperative that the physician know the results that follow his work.

523 West Sixth Street.

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TUBERCULOUS CAVITIES—THEIR DIAGNOSIS BY THE ROENTGEN RAY*

By Merl L. Pindell, M. D.
San Fernando

Discussion *by Carl H. Parker, M.D., Pasadena; Charles G. Sutherland, M. D., Rochester, Minnesota; H. S. Hunsberger, M. D., San Francisco.*

CAVITY formation plays an important part in the progress and prognosis of pulmonary tuberculosis, and its early diagnosis is extremely important.

FORMATION OF CAVITIES

Some believe that the formation of a cavity depends in a good part on secondary infection with the various pus-producing organisms, but the recent exhaustive work of Medlar and Krause explodes this theory and shows that it is due entirely to the polymorphonuclear leukocytes in the reaction to the tubercle bacilli; and the presence of which is no indication of secondary infection. All tuberculous ulcers and cavities are formed in the same way, first, by the implantation of the tubercle bacilli; second, by the softening of a mass of cells with a separation from the surrounding tissues, then a rupture, usually near the center. The cavities may be pinhead in size or occupy a whole lobe or an entire lung. Cavities may have smooth, dry walls, or may be ragged and secreting. As a rule the more chronic a cavity the smoother its walls. A cavity may at one time contain secretion and at another time be empty. These various conditions necessarily produce different physical signs. All cavities of any size usually extend to the wall of a bronchus, which subsequently ulcerates and permits the evacuation of the liquefied contents. A cavity just beneath the visceral layer of pleura may perforate into the pleura cavity, producing an open or valvular pneumothorax.

SILENT CAVITIES

It is generally taught that the classical amphoric signs of cavities are distinctive only of the larger ones, whereas the great majority which are small do not betray their presence by abnormal physical signs. About 50 per cent of all tuberculous cavities, regardless of size, are silent, according to the conclusions of Bendove.

ROENTGEN RAY IN CAVITY DIAGNOSIS

There is perhaps no phase of tuberculosis upon which the roentgen ray has shed more light than on cavitation. The following quotation is taken from the July, 1926 issue of the *American Review of Tuberculosis,* from the Fitzsimmons General Hospital Medical Corps, United States Army, Denver, Colorado: "During the past four years annular shadows have been carefully studied. Cases of annular shadows that were diagnosed by the roentgen ray, but without physical signs, were reported by ward officers and were further studied and checked up, and almost invariably the existence of a cavity could be proven. Three hundred and seventy-five autopsies on tuberculosis subjects were studied. Three hundred and forty-nine had

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cavities demonstrated at autopsy; in all these signs of cavities were seen in the x-ray plates. Our pathologist found a few localized pneumothoraces, but the so-called pleura rings could never be found."

The article above referred to has been a revelation to me; it has helped to clear up several doubtful things, namely, pleural shadows, localized pneumothorax, and, of course, annular shadows in general. There are not enough articles of this kind that deal with so many autopsy checks.

The favorite site of infection with pulmonary tuberculosis is in the upper lobes, hence the prevalence of tuberculous cavities also in these regions. Here, too, fortunately these cavities are more easily demonstrated, owing to their superficial situation and are found quite commonly in early lesions, and of course when found, change the clinical classification from minimal to far advanced, thus changing the prognosis as well.

It is not uncommon, especially at the roots of the lungs, for the blood vessels and indurated and caseous lymph nodes to be so arranged as to simulate cavities in the x-ray examination. Cavities in this region are quite rare, however. A confusion between the cross-section of a bronchus and a cavity is possible only to the inexperienced. Sometimes annular shadows are indicative of a zone of demarcation about an infiltration, which infiltration will eventually result in a definite cavity, and these are sometimes difficult to diagnose at an early stage. But sooner or later the defect will become absorbed, converted into fibrosis, or show a definite wall of cavity formation. Small areas of rarefaction and small cavitation are sometimes very hard to diagnose, particularly when there is beginning fibrosis in an area of caseous tissue, the new connective tissue interweaving so as to closely resemble beginning cavitation and can only be differentiated by definite wall and punched-out appearance. The aspect of tuberculous cavities depends upon their age, location, and the pathological tissue in which they are found. They usually occur as more or less well-defined ring-shaped bands of increased density. Within the ring of increased density there is a field of markedly diminished density in most cases.

CLASSIFICATION OF CAVITIES

Several years ago Doctor Jaches of New York City gave me my first real lesson in the roentgen-ray diagnosis of chest conditions, and I shall quote freely from him, especially as regards classification of cavities. He describes three types of cavities, with minor modifications, which are due to the transition of one form into another.

The first type is the annular cavity, which is found especially in early tuberculosis and is the result of breaking down of the proliferative type of lesions, and in which caseation is not extreme. These early cavities are traversed by lung markings, and their favorite site is in the infraclavicular region near the axilla. The smallest cavities may be only a fraction of an inch in diameter or may attain the size of two or three inches. They usually are single and are often overlooked on physical examination because they are not surrounded by consolidated lung and do not communicate with bronchi and are, therefore, not transmitted to the surface of the chest.

The second type of cavity lies in a densely infiltrated lung in which it is formed by the rapid breaking down of caseous tissue. These have a punched-out appearance and often show a fluid level, and are usually surrounded by a well-defined wall which is composed of both fibrous tissue and adjacent consolidated lung. Like the cavities of the first variety these are more commonly seen in the upper lobes, but may be found in any portion of the lung where rapid breaking down of tissue is occurring. The cavities are of various sizes and shapes, depending on their location and the degree to which the fibrous wall is formed about them. In acute caseous cavities there is usually an irregular excavation with no evidence of a limiting membrane. On the other hand, if the patient survives, there is the formation of a capsule, which is generally circular in outline. With this progressive type of lesions it is not uncommon for a whole lobe or a whole lung to become excavated, as we have encountered in our institution in a few instances. These types may not have trabeculations in their walls, and, if air containing, closely resemble a localized pneumothorax. Many such, no doubt, have been diagnosed pneumothorax. In cavity formation there is usually a definite roughly circular wall and a slight amount of lung marking discernible, therefore these are not distinctive of pneumothorax. Peripheral compression is common, but localized pneumothorax is not so common. Cavities may be multilocular and assume bizarre shapes. Giant cavities are seldom seen with a fluid level, but in the punched-out variety a fluid level is frequently seen. It shows how complete a drainage we have in these cases and still at autopsy we saw in one case the openings into the bronchus exceedingly small and tortuous and only discernible by hunting with a small probe. I wonder if some of these have been called the closed type. Sometimes a cavity, owing to its deficient drainage, becomes full of fluid, excluding its punched-out appearance and making interpretation difficult, especially in a lung that has little infiltration. The history and the clinical aspect of the case will help to differentiate it from lung abscess.

The third type of cavity represents the terminal stages of cavities as just described, in which conservative influences limit its extent and attempts to encapsulate it. The indurative tendency of apical disease here manifests itself. We find cavities of moderate size surrounded by dense fibrous tissue and many dense adhesions and thickened pleura. The adhesions and thickened pleura prevent compression from artificial pneumothorax, but fortunately these kinds of cavities usually do not need compression. Patients who have these types of cavities have a fair degree of health. These are the patients upon whom a diagnosis of chronic bronchitis, bronchiectasis, or emphysema may be made. Their cavities are lined with

smooth, connective tissue, their expectoration may be slight, and may contain no tubercle bacilli.

SOLITARY CAVITIES AND POSTURAL DRAINAGE

The discovery of a cavity which lies in an apparently healthy lung is rather rare. We must assume that the infiltration which had previously been present was completely absorbed and that only the cavity remains. These cavities are very prone to become larger and show fluid level. We have seen quite a number and have tried postural drainage with fairly good results. Roentgen interpretations can be of aid to the clinician in these cases. If a cavity shows a persistent fluid level the drainage may be higher up in the cavity wall. Sometimes we observe a definite break in a rather thick-walled cavity, and we assume this is the favored point of drainage. A cavity in the upper lobe is more likely to have adequate natural drainage, and a cavity in the region of the hilum is in close relation to large bronchi and is likely to drain spontaneously. On the other hand, a cavity close to the periphery of the lung is in connection with only small terminal bronchi and can rarely be emptied satisfactorily by postural drainage. A lower lobe cavity usually drains best when the patient lies with the head down on the side opposite the lesion. Position of patient depends usually on chance relation that the cavity may bear to the bronchus with which it communicates. Multiple small cavities with thin walls may resemble bronchiectatic cavities and are sometimes very hard to diagnose. If these small cavities are found in the lower lobe or lower part of the lungs and there is a history of pneumonia, especially of repeated attacks and of abundant foul-smelling sputum, it is quite suggestive of bronchiectasis, which diagnosis is made more convincing if the patient has clubbed fingers and has had several negative sputums.

In some cavities, as in the saccular type, the roentgen ray gives a characteristic picture. These are honeycombed, spongy-appearing densities, which are usually acquired in childhood, following pneumonia. The installation of lipiodol will often clear up the diagnosis.

A patient on whom an autopsy was done had far advanced pulmonary tuberculosis and a tuberculous meningitis. Roentgen ray and physical findings indicated multiple small cavities in both upper lobes. The autopsy verified the diagnosis of tuberculosis, but instead of finding small cavities in both upper lobes, our pathologist found tubular bronchial dilatations, most of which were in the primary trunks. What was actually seen in the films were cross-sections of these dilated bronchi.

A considerable hindrance in the diagnosis of cavity formation is a thickened pleura, but usually if the pleura is not too thick or too general, a circular area of decreased density can be made out and a diagnosis established. Fluoroscoping and taking roentgenograms in different positions will be a great aid in such cases. If the obliteration is by fluid this can be aspirated and a diagnosis can then be made.

HEALING OF CAVITIES

A few years ago it was generally accepted that cavities of any size never healed. We now know differently. They heal and sometimes with great rapidity. In our institution with over six hundred patients we have found large cavities that have shrunk, changed shape and completely disappeared. The changing in shape and size, and the complete disappearance of annular shadows do not indicate that the shadow in question was not a cavity. Not long ago I attended a meeting where there was a discussion concerning a certain shadow that had disappeared, and the clinician came to the conclusion that it had not been a cavity. If it was not a cavity, what was it? Certainly not a localized pneumothorax, for it contained lung markings and had a definite circular wall. Pleural shadows of this character are so unusual that they should not be considered, and besides if it had been a pleural shadow, it would have persisted. The correct interpretation of such shadows plays an important part in the progress and treatment. There is no doubt that a few annular shadows are due to other causes, such as a wall of a lung abscess, tumors, cysts, interlobar pneumothoraces, tuberculosis of the bronchial lymph nodes, emphysematous blebs and bronchial dilatations.

CONCEALED CAVITIES

If there is a suspicion of a cavity and it is not revealed by the ordinary stereoscopic film, other positions should be used, such as the lateral, the lateral recumbent, and the right and left oblique. I have used the lateral recumbent position in demonstrating shifting fluid levels in cavities. Cavities that show an ill-defined or ragged capsule or a well-defined capsule with frequent fluid levels, have, as a rule a poor prognosis.

Knowing how essential it is to diagnose cavities early, we may be too hasty in making our diagnoses, but it seems better to err this way than the other. For this reason I usually report everything I think suggestive, and in that way we can at least be on our guard.

CONCLUSIONS

1. All sizes of cavities, irrespective of their location, are usually diagnosed promptly by the roentgen ray.

2. Cavities heal more frequently than was formerly thought to be the case.

3. Annular shadows demonstrated on films of tuberculous patients are practically always due to cavitation; therefore all annular shadows present on such films should be considered cavities until proven otherwise.

Olive View Sanatorium.

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DISCUSSION

Carl H. Parker, M. D. (65 North Madison Avenue, Pasadena)—Doctor Pindell has done well to emphasize the importance of cavity formation in tuberculosis and the great value of the x-ray in the diagnosis of these cavities.

It is indeed fortunate that the procedure of artificial pneumothorax, together with x-ray studies, at once proves that a cavity exists and at the same time acts as the best sort of treatment of the condition. When a shadow is seen in the roentgenogram of a tuberculous patient which has the appearance of a cavity, it seems to me to be a logical procedure to introduce air into the pleural cavity, early in the progress of the process, rather than to wait for the uncertain physical signs of the thickened walls of a long-standing lesion. If this is done I believe that the healing of cavities will be much more often accomplished than it has been in the past and that the individual patients will be saved a long and trying invalidism.

As roentgenologists we should certainly be on the alert to recognize cavities at the earliest possible moment, because of their importance to the patient.

❦

Charles G. Sutherland, M. D. (Mayo Clinic, Rochester, Minnesota)—As Doctor Pindell's paper suggests, there is a three-way chance of error in the diagnosis of tuberculous cavities; they may be overlooked or mistaken for other lesions, and other lesions and conditions may be mistaken for cavities. The cavity which lies in an area of consolidation or which is completely filled at the moment of examination is scarcely demonstrable. Small cavities and newly formed cavities which are often of irregular shape and without definite walls, easily escape observation. Multiple grouped cavities can be confounded with bronchiectasis as Doctor Pindell has said. Although strong arguments have been advanced to the contrary, present opinion inclines to the view that the so-called "subpleural pneumothoraces" are really cavities, as a rule. When diagnosis is attempted on a single film, it is often easy to visualize an apparent cavity by mistaking vascular markings, scar tissue, or a portion of a rib for the wall of a cavity, and the illusion is heightened if the included area is emphysematous and bright.

In the main, cavitation is a feature of advanced tuberculosis, and while cavities may occur relatively early and their discovery is important, it is still more important that the tuberculosis itself be diagnosed, whether cavities are demonstrable or not.

❦

H. S. Hunsberger, M. D. (870 Market Street, San Francisco)—Positive x-ray proof of lung cavities requires their demonstration as circular shadows in both the anterior and lateral projections. Less positive evidence is a stereoscopic image suggesting cavity in the anterior projection. An annular shadow plus a fluid level is practically conclusive evidence of cavity. Very many cavities are not susceptible of such positive demonstration. Cavities at the apices or in the upper part of the upper lobes cannot easily be shown in the lateral view; but annular shadows that might be considered pleural rings or localized pneumothoraces—and are sometimes so considered—can also be demonstrated in carefully taken lateral views in so many instances as to raise the question whether all annular shadows should not be considered cavities until proven otherwise. It is probable that they should.

Doctor Pindell has done a service by calling attention to the frequency of silent cavities. It sometimes happens that large annular shadows are shown in both views, demonstrating large cavities to the satisfaction of the roentgenologist, when there are absolutely no discoverable clinical signs. The clinician is sometimes inclined to doubt the presence of these cavities. In such cases the roentgenologist should stand his ground, fortified by the statements of Doctor Pindell and the autopsy statistics he has quoted from the Fitzsimmons General Hospital.

❦

Doctor Pindell (closing)—I have used the lateral view in demonstrating cavities, as suggested by Doctor Hunsberger, and found it to be of value, but, as he has stated, "For cavities at the apices and in the upper part of the upper lobes, this position is not applicable." Therefore I consider the oblique views better when in doubt, as the greater percentage of cavities are in these regions.

Doctor Sutherland's point is well taken, when he says, "That on a single film we are likely to mistake vascular markings, scar tissue or the attachments of the anterior ribs for cavities." I usually avoid this error, for I seldom diagnose tuberculous cavities except by the stereoscope.

He also mentions "that, while the diagnosis of cavities is important, it is still more important that the tuberculosis itself should be diagnosed, whether cavities are demonstrable or not." This, of course, we all know is true, but my paper deals entirely with the diagnosis of tuberculous cavities and not with the diagnosis of tuberculosis.

In my stressing the importance of the early diagnosis of tuberculous cavities Doctor Parker has brought out one of the big points that I had in mind when he mentions artificial pneumothorax and its indications. All of us who are in large sanatoriums know that this is a recognized procedure, and it should be done early.

POSTURAL DEFECTS—CORRECTABLE IN SCHOOL PHYSICAL EDUCATION CLASSES*

By William Arthur Clark, M. D.
Pasadena

Discussion *by Harold H. Hitchcock, M. D., Oakland; Steele F. Stewart, M. D., Los Angeles; C. L. Lowman, M. D., Los Angeles.*

THE necessity for corrective classes in physical education is readily seen when one examines the statistics of findings in large series of cases where routine physical examinations have been made of great numbers of children or young men and women as in universities, large school systems, and in recruits for military service. Such statistics show a certain percentage of any large group to be abnormal in one or more aspects of body mechanics. In some series this percentage is surprisingly large.

It might be suggested that statistics include all the very slight deviations from the normal which are of no consequence except perhaps from the minor viewpoint of cosmetics. In answer to this argument, it can only be said that the danger to health and well-being is a potential one and that whatever measures are adopted to correct even the slightest defect, are justified if they bring the individual to the fullest possible physical capacity

* Summary of a talk given by the author before the physical education teachers of the Pasadena schools.

and as near to perfection as training and perseverance can make him or her.

The question arises: What is normal in a child or youth? Certainly normality is not a sharply defined more or less arbitrary ideal to which everyone must conform or be condemned as abnormal. Types must be recognized and given due consideration. Some boys and girls are of the Antiole type, others are the Clydesdale type. One may be just as healthy, mentally and physically, as the other. Two trees of the same kind may differ widely in contour, yet we would not think of referring to either of them as abnormal. One boy may show a deviation from what is considered as normal posture but due to good compensatory muscle strength, show no ill effects, while another boy with the same degree of deviation may not compensate in the same way and sooner or later show the effects in ill health.

VICIOUS CIRCLE IN POSTURE

There is a vicious circle in posture which has many links. Starting with the link which has to do with the structural framework of the body, we have: (1) slump in the skeleton; (2) interference with organs; (3) poor physiologic function; (4) malnutrition and poor aeration; (5) depressed muscle tone which causes (1) slump in skeleton, etc. It is difficult perhaps in each individual case to tell where the circle started, but it may be attacked and a link broken anywhere. The links with which the physical education teacher have to deal are mostly those of depressed muscle tone and slump in the skeleton.

We must not think of the human body as a structure balanced stably as is a steel building or tower. Its line of gravity or weight-bearing does not pass through the dead center of any joint. In the spine, which is a long series of joints, the line goes through the promontory of the sacrum and the anterior part of the lumbar curve, but does not touch the vertebrae again except in the cervical region. If it were not for muscles and ligaments, the joints would bend under the weight and the entire structure would crumple. Those muscles which counteract this tendency to crumple must necessarily be the strongest.

One of the most delicately balanced joints is the hip. It has been likened by Todd to the hub of a bicycle wheel, the spokes of which are represented by the surrounding muscles. Both the intra- and the extrapelvic muscles maintain the equilibrium of the pelvis on the hips. Interference with any one group breaks the equilibrium. The pelvis is then tilted forward, carrying with it, of course, the sacrum, often to such extent that the sacrum lies completely horizontal instead of nearly perpendicular. When such condition exists a severe lordosis compensates for this extreme forward curve, and an exaggerated dorsal curve which pushes the head and shoulders forward. Many round shoulders may have their real cause in a tilted pelvis. It is certain that round shoulders are rarely seen without the extreme lordosis that goes with the tilted pelvis.

THE HUMAN SPINE COMPARED WITH THAT OF QUADRUPEDS

Lovett makes an instructive comparison of the human spine with that of quadrupeds. It must be remembered that the former differs in anatomic structure very little from the latter; but that they differ in several respects in the mechanics of function. The quadruped spine carries the weight of the trunk somewhat as the supporting structure of a bridge carries its load, the line of force being at right angle to the spine, while the human spine supports the body in a line of force nearly parallel to itself. The front limbs in the quadruped act as supporting structures, but in the human they are merely weights which must be supported by the spine. Chest breathing in quadrupeds is aided by gravity; while in the human frame the ribs must be raised against gravity.

In evolving from the horizontal to the upright position there have been, necessarily, many changes in stress of ligaments and muscles and one is inclined to believe that the evolution is still incomplete, judging from the number of backache cases which we all see and which seem to be due to overstrained muscles. The junction of the spine with the pelvis seems to be the weak spot in the mechanics of the upright position. Possibly in the distant future this joint may become completely ankylosed so that a relaxed sacro-iliac joint and backaches will be an unknown affliction.

DEVIATIONS IN THE ANTEROPOSTERIOR PLANE

Considered without reference to the concomitant disturbances of equilibrium farther down, round shoulders consists in a forward and downward slump of the scapula and entire pectoral girdle, and in an abnormally exaggerated dorsal curvature of the spine, especially in the upper dorsal region. The child is usually low in muscle tone; and in cases originating in habit, low also in will power. The heart and diaphragm are, to a certain degree, suspended from the root of the neck, and if this point of support is persistently low these organs tend to lose tone and suffer from impairment of function. If the entire weight of the clothing is carried on shoulder straps which pass over the outer part of the shoulders, the growing child will have an added difficulty in keeping the shoulders up. Lovett suggests that instead of this method all the clothing below the waist should hang from the belt line, leaving the shoulders unweighted. Goldthwait emphasizes the effect of bad design in school furniture in causing the child to assume a bent attitude at the desk and a slumped position in the chair. The chair should have a shallow seat which will prevent the inclination to slide forward and to buckle the spine in the middle. The shallow seat also provides for both long and short leg individuals as, in the former, the thighs can incline downward readily, and in the latter the individual can sit back in the chair with equal comfort.

As this condition is one of the most prevalent postural defects in school children, it is practicable to treat them in classes. Supporting braces

are generally inadvisable because they tend to weaken the muscles, but they may be found necessary in those cases where passive manipulation is being done, to be worn part of the time to maintain what has been gained by the manipulation.

There is a form of round shoulders which may have its inception in a developmental defect of the vertebrae rather than in muscular weakness. While the vertebrae cannot be said to be diseased, there has been perhaps a delay in ossification in the anterior part of the discs which has resulted in irregularity in shape and thickness of the vertebral bodies anteriorly situated. This causes a backward curve which may be more or less fixed. Such a condition should be suspected in cases which resist passive correction.

Lordosis and abdominal ptosis go together as a rule, and are observed usually in children who are round shouldered. The relaxed abdominal muscles become stretched to unusual length and lose their tone. While it may be necessary in patients well past the youthful years to put on an abdominal belt, in the school girl, the best remedy is development of the rectus muscles by systematic exercises carried out daily. Extreme cases of lordosis may develop into spondylolisthesis in which there is a definite forward displacement of the fifth lumbar vertebra over the sacrum. It should be suspected in people who have very deep depression in the lower lumbar region and who have persistent backache which resists all the usual remedies for relief.

LATERAL DEVIATIONS

So far we have spoken of deviations in the anteroposterior plane. Of the less frequent lateral deviations scoliosis is the most common form. This may be functional, structural or paralytic. The functional type can often be helped by such exercises as the school gymnasium can furnish. Most of these patients are girls, and the curve is to the right in a majority of instances. Many causes have been suggested for the development of lateral curvature of the spine. Perhaps the one heard most frequently is the position of the child at the school desk. This would explain the preponderance of right-side curves since most people are right-handed and sit with the right shoulder higher in writing. It does not explain, however, why more girls than boys are affected.

Another cause which has occurred to me recently, is the posture during sleep. If one lies on the side with a pillow under the head and shoulders, the spine naturally curves down in the lower dorsal region merely by the force of gravity. In girls, the pelvis being wider, this downward curve would be more pronounced than in boys. If true, this would explain the preponderance of girls who suffer from this deformity. Also if it is found that all those who have a right lateral curve are in the habit of sleeping on the right side with a pillow, then the right side majority would be explained. So far the number of cases observed and questioned has not been of sufficient number to verify the theory; but those who have been questioned admit sleeping usually on the right side and have right-sided curves. Much more time is spent in sleep than is spent in sitting at a school desk or in any other one posture, which suggests that the sleep theory is more plausible than the desk theory.

A functional curve, if allowed to persist, may become a structural scoliosis. It is obvious that the best time to treat such a deformity is in its earliest stages before the bones have taken on a contour which fits in with the changed condition.

The diagnosis of scoliosis can be made by carefully observing the child from directly behind. The clothes should be removed down to the hips except that a narrow apron may be hung down in front so that it does not cover the shoulders. The arms should hang relaxed. Severe or even moderate cases can be recognized at a glance. The very mild forms will require more careful analysis. It should be noted whether the shoulders are on the same level and whether one scapula is higher or more prominent than the other. The curves between the ribs and hips should then be compared, one side with the other. The iliocostal angle may be deeper or more acute on one side and more or less flattened out on the other. In cases where one leg is longer than the other, the hip is, of course, actually higher on the side of the long leg and the iliocostal angle is also exaggerated. Measurement of the legs should be done in all cases. The patient is then asked to bend forward until the back is horizontal, head down, arms hanging relaxed. A curve to the right will then show up as an elevation of the right side above that of the left. This is due to rotation of the spine, carrying with it the entire chest.

Scoliosis cases cannot well be treated in groups or postural classes but should have individual attention. Each case is a problem in itself, and unless two identical cases should be found, special exercises suited to each case will be required. The structural cases will, of course, need more than exercises, as it is necessary to overcorrect and to hold them in the overcorrected position in the hope of changing the shape of the bones and the contour of the chest. Paralytic scoliosis requires that the spine be supported, since a paralyzed muscle has little chance of improvement if kept constantly on a stretch. Exercises in these patients are to be done with caution in order that the paralyzed muscles may not be overworked and yet have sufficient use to develop the power that remains.

Torticollis, or wry neck, in its mildest form, can be helped by supervised exercises supplemented by massage and passive motion. The majority of such cases are due to muscle contracture which can be stretched out if not of too long duration. The unsightly asymmetrical appearance of the face with one eye higher than the other, which is noticed in torticollis of long standing, can be avoided if the condition is recognized and treated in the beginning. Even though the twisted head and wry neck can be straightened by cutting the

tendon, the face can never be changed if the deformity has not been corrected in childhood.

65 North Madison Avenue.

DISCUSSION

HAROLD H. HITCHCOCK, M. D. (1906 Franklin Street, Oakland)—Doctor Clark has pointed out some of the fundamentals necessary for the correction of postural defects in school children. The correction of these defects I feel should be the first thing accomplished in the departments of physical education. After the fundamentals of correct posture have been mastered, exercises done by students to maintain correct posture will be of much greater benefit. It is indeed discouraging to see students go through compulsory exercises maintaining an entirely incorrect body mechanics.

Doctor Clark has clearly pointed out what is important, and it would be gratifying to see more students coming out of high schools with these details corrected. Examinations of college students do not show this to be the case.

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STEELE F. STEWART, M. D. (817 Westlake Professional Building, Los Angeles)—Doctor Clark in giving a résumé of the theories of posture has failed to mention probably the two most important factors involved in the production of posture: namely, heredity and fashion.

At the present time there is no way to influence heredity, and fashion is based on personal vagaries that put it beyond systematic help. I feel that the whole subject of posture is being overemphasized, and especially is this true when it is turned over to the physical education department of the public schools. It is a rather remarkable fact that self-confidence varies in inverse proportion to knowledge, and the blasé way in which the subject of posture is taken by the average physical education graduate and teacher I fear reflects largely ignorance. It is my personal opinion that it is a waste of time and public money to carry on any corrective physical education in the public schools. The problems involved in any particular case are so complicated that specialized knowledge is required for proper understanding and solution, and hence corrective treatment should only be given under the direction and care of a competent physician.

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CHARLES LE ROY LOWMAN, M. D. (2417 South Hope Street, Los Angeles)—To persons having extensive experience in the examination of school children of all ages the force of Doctor Clark's comments will meet with significant approval. Medical men have assumed an attitude of indifference toward postural deviations, believing that they are hereditary and will be outgrown, and because certain cases of bow-legs and shoulder girdle deviations in childhood are adjusted after a few years, take for granted that readjustment always occurs. If this were true why should large groups examined at the universities, and similarly in the army, show a very high percentage having postural deviations exactly like those in childhood? The findings and percentages of postural defects in these adult groups have been found to be almost identical with those in the grades. This is, I think, definite evidence that most deviations are not outgrown.

Various authorities give percentages of from fifty to eighty, of school children with some postural deviation. It can readily be seen that there are not enough interested medical or orthopedic men to train this enormous number of individuals. Consequently the school health and corrective departments must bear the brunt of this preventive work. It is well known that many physical directors are not specially trained in corrective work, but the impetus of the last few years has given a good deal of very definite education to many supervising physical directors who are carrying on excellent work in this line. The schools of Pasadena for years have carried on a uniform and consistent line of corrective work. I have been well informed that the corrective department of their high schools contains more individuals who are recent arrivals in Pasadena than it does resident Pasadena children who have passed through the grades, showing that the work of the last five years, even where it is done on a group basis, as it is in their elementary schools, is effective.

The most essential factor in this work is, of course, the necessity of impressing upon directors and examiners just which children may be handled by the physical education department. The orthopedic referees in the Los Angeles schools are doing very effective work along this line in weeding out the cases which are too severe to be handled by the directors, as well as those that are pathological. It is the aim of these departments to handle only simple postural cases which should respond definitely to health and exercise work.

The largest group of deviations are those found in the shoulder girdle and in the feet and legs. In young children these deviations comprise as high as 80 and 90 per cent, and in the high school group 65 to 70 per cent. Physical education activities should be modified to meet the needs of the majority. Activities can be definitely corrective without being labeled as such. For instance, swimming is a corrective procedure which can be used for certain types of cases, such as shoulder girdle deviations and round shoulders. Certain strokes can be definitely corrective and still not lose any recreative value. Vicious effects of running and jumping can be neutralized by proper attention to shoeing and by giving enough other gymnastic exercises to counteract such effects. Throughout the whole chain of activities a careful analysis of activities will show that this same idea can be carried out to good advantage.

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DOCTOR CLARK (closing)—I wish to thank Doctors Hitchcock, Stewart, and Lowman for their discussion of this paper. Of course, as Doctor Hitchcock suggests, the problem of body mechanics should be intelligently met. The formation of habits in the child are most important in this connection.

I am glad to have Doctor Stewart's frank criticism and feel that such is essential regarding any problem which may be overemphasized as it serves as a balance wheel in our activities.

Much of the work in the Pasadena schools had its start under the guidance of Doctor Lowman, who is still helpful with advice regarding all these problems. His comments above are therefore most valuable.

ON COUNCILMANIA LAFLEURI*

By RAWSON J. PICKARD, M. D.
San Diego

DISCUSSION *by T. H. T. Wight, M. D., Palo Alto; Herbert Gunn, M. D., San Francisco; John V. Barrow, M. D., Los Angeles.*

SIX years have passed since Kofoid and Swezy published their report describing *Councilmania lafleuri,* an ameba parasitic in the human intestine,[1] where it has been found to be as common as the infection with *Entameba coli.* During this time in spite of the importance of the discovery both scientifically and clinically, that is, as regards both exactness of observation and the art of medicine, there has been but little notice of this ameba. Wenyon denied the specific existence of *Councilmania,* claiming that most of the budding cysts were artefacts, and while his paper was answered[2] he does not appear to have given the matter any further consideration, although in his "Protozoölogy" he gives a description of it as an "aber-

* Read before the Pathology and Bacteriology Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

Fig. 1—Magnification about 945x. Motile Councilmania, 28 x 24 mu, showing ingested red blood cell, and nucleus with karyosome composed of mass of chromatin granules.

rant form of *E. coli.*"[3]† Brumpt[4] following Wenyon, adds *Councilmania* to the long list of synonyms of *E. coli.* In medical literature scattered references can be found (cf. Brumpt, citing Riff of Strasbourg) to an *"E. coli"* that is pathogenic and ingests blood cells, but the ameba is not usually described with sufficient detail to know whether or not *Councilmania* had been seen; there is the notable exception of Mathis and Mercier,[5] whose paper is referred to later. Indeed to the honor of California in the case of this work of Kofoid and his associates the proverb as to the prophet has been reversed. Barrow,[6] Hall and Reed,[7] and other writers here carefully distinguish *Councilmania* from the other amebae.

NONRECOGNITION OF THIS PROTOZOA

There are several reasons for this general neglect. In the first place, study of the parasitic protozoa in man is only a few years old, clinical work having only existed since the war. Then most of the textbooks have been written by zoölogists with little clinical contact, who judge the parasitism of man with his sensitive neuropsychic system, as they do that of the simpler organisms. This is not true of Brumpt, who combines both viewpoints, nor of Kofoid. A naïve discussion of *E. histolytica* infection in the February bulletin of the Chicago Medical Society illustrates the lack of realization of the importance of this class of focal infections by medical leaders. In addition, there is the difficult technique of diagnosis, and special training is needed to recognize these minute parasites. The protozoae are not like the tubercle bacilli that glow as red a warning for the tyro as for the expert.

But there is an added difficulty when one attempts to follow the texts of the authorities, and this because the description of the two well-known amebae is confused by including the description of this third species, which latter, once recognized, permits a definite description of all three amebae and their ready separation from each other. Wenyon (and one might quote Brumpt or Dobell, but Wenyon makes more positive statements) says that an ameba of 15 to 20 mu, very active, containing red blood cells and having an indistinct nucleus is certainly *E. histolytica*, and that a slow-moving ameba with granular pseudopodia, food vacuoles containing yeasts and bacteria but never blood cells, with an eight-nucleate cyst is *E. coli.* What is one to say then of an ameba which constantly exhibits the size, motility, hyalin pseudopodia of the ameba of dysentery, yet like *E. coli* has an eight-nucleate cyst, and in the motile form has a visible nucleus, with yeasts and bacteria and occasionally blood cells in its food vacuoles? There is nothing more discouraging for those who try to observe accurately and well than such obstacles coming from their leaders, nor does anything more incline the beginner to listen to the counsel of certain works on this subject which state that amebae vary so individually in a species that detailed study of them is only confusing.

ITS DIFFERENTIAL DIAGNOSIS

Before Kofoid and Swezy described *Councilmania lafleuri* this ameba was taken in the motile stage for the ameba of dysentery and when encysted for *E. coli,* which were the only amebae generally recognized in the feces before the period of exact observation which has followed the wartime surveys showing the frequency of protozoal

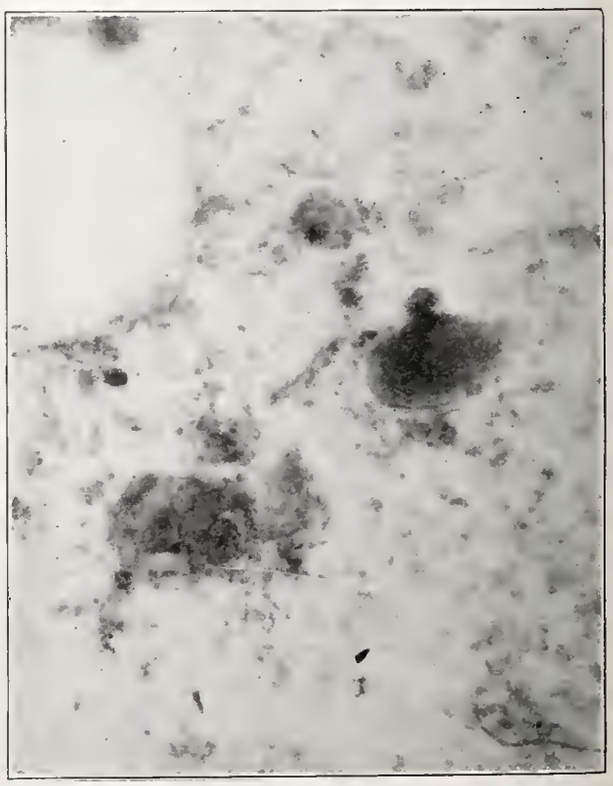

Fig. 2a—Magnification, 945x. Below and to left, motile Councilmania, 32 x 20 mu, showing hyaline ectoplasm. Above, a budding cyst, 14 x 25 mu.

†It might be noted that in this excellent and thorough work there are other arbitrary rulings, e. g., the rejection of da Fonseca's work on enteromonas.

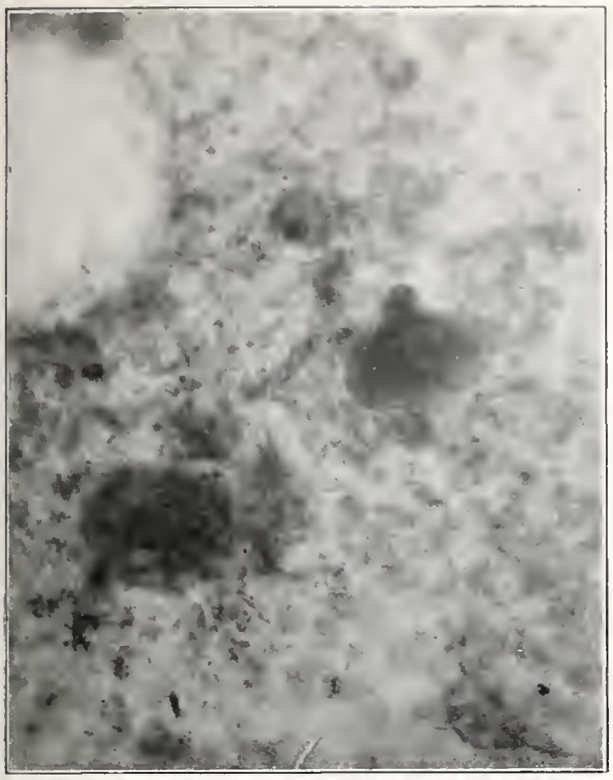

Fig. 2b—Same as 2a, but taken at higher focal level to show the nucleus in the bud above the cyst.

infections in all classes of the population and their causation of low-grade illnesses. Before this time, stained preparations were seldom made in clinical laboratories and cysts were rarely looked for or recognized. At present more careful work is requisite to be acceptable and is more often done. While *Councilmania* resembles the two *Entamebae*, it differs from them as much as they differ from each other by its dispersed karyosome, and nuclear membrane free from chromatin in the cysts, and in the budding cysts presents a character not seen in any of the other amebae. These budding cysts were first seen by Mathis and Mercier, and were so minutely described and drawn by them that we can recognize *Councilmania* although the writers wrongly thought them to be schizogonic forms of *E. coli*, an interpretation due to wet fixation in sublimate which does not plainly show the cyst wall except in those cysts, evidently destined for another host and not to bud in the intestine, which have an exceptionally thick wall. With wet fixation in alcoholic Bouin's solution, following Langeron's technique[8] the wall is always visible, the cytoplasm often shrinking away from it, leaving a space crossed by fine protoplasmic threads so the area has a light vacuolated appearance. The nuclei and denser cytoplasm are not always in the center of such a cyst; they are often attached to a point on the cyst wall where there may be a depression, a bulging, or a pear-shaped neck, all apparently early stages in budding before the actual extrusion of a nucleus surrounded by a small mass of cytoplasm as a free ameba—found in my preparations in about 3 per cent of the cysts. It is easy to convince one's self as to the meaning of the budding cysts by search over a stained slide and finding cysts in all stages of the process. Further details can be found by consulting Kofoid's papers.

A protozoal cell does not differ so much from the phagocytic cells of the host that it cannot insinuate itself into the cellular colonies of the host, where the products peculiar to the parasitic metabolism are long tolerated. Man's adaptability may for years conceal the damage, even for the lifetime of an individual, but there are always some individuals who evidence the dangers latent in a parasitism either by physiologic changes, or toxic effects on the nerves or other sensitive cells. Syphilis offers an analogy; and the colon bacillus likewise (aside from the occasional acute infections, in all of us, as Metchnikoff has shown,) wastes strength by a slow intoxication that wears out the body. The flagellates often seem to be harmless in a carrier, at least at the time of examination, so that many writers can still be found who consider them harmless commensals. Brumpt called attention to their etiologic rôle in diarrheas in 1912. Haughwout in 1918 discussed[9] the fact that their metabolic products, being unfitted for human absorption, were possible sources of toxicity, aside from tissue invasion, which in the case of the amebae means also the invasion of the bacteria carried with them. Such products could arise from any protozoan infestation. The fund given Hegner last year for the investigation of the relationship of man and his parasitic protozoa has not yet been heard from. The pathogenicity of the protozoa is most difficult to demonstrate absolutely, as few of them have been cultivated. There is, however, a steadily accumulating mass of clinical evidence which is beginning to incriminate

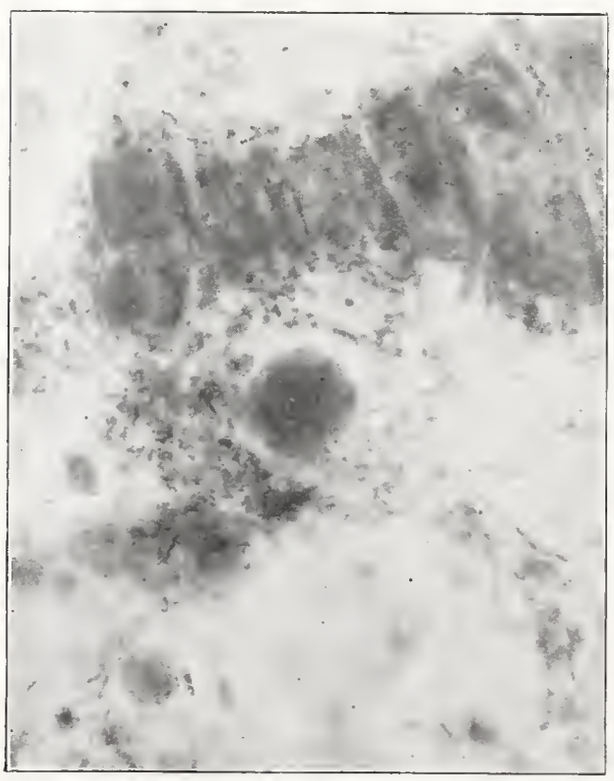

Fig. 3a—Eight nucleate cyst 20 mu, not budding. Five nuclei in focus, thick cyst wall. Karyosome a group of granules.

Fig. 1

Fig. 2

Fig. 3

Fig. 4

DIAGRAMMATIC ENLARGEMENTS

1. Red blood cells and nucleus in Fig. 1.
2. Nucleus in the buds in Figs. 2a and 2b.
3. Groups of five and three nuclei in Figs. 3a and 3b.
4. Nuclei in Fig. 4 grouped near the bud.

even organisms until very recently considered harmless by all, such as *Endolimax nana*.

ITS PATHOGENIC NATURE

The ameba *Councilmania* is pathogenic in the same manner as is the small race of the ameba of dysentery, which Brumpt [10] sets aside as a separate species, *E. dispar,* based on its slight pathogenicity for cats, noncausation of dysentery, and its feeding, instead of by histolysis and upon blood cells, on bacteria. An even firmer basis for its separation would be the peculiar pathogenicity (first worked out by Boyers). Nearly all carriers besides constipation show toxic effects in the nerves, joints, in disturbance of function, especially digestion, in general lassitude, a ready fatigability, so that while the symptoms are too numerous to enumerate the general picture is recognizable and definite enough for practical diagnosis, as Boyers [11] has stated. The same clinical picture is shown in heavy infections with *Councilmania.* Kofoid reports the probable pathogenicity of this ameba in his first paper, and reports of cases followed by Barrow and by Hall and Reed confirm it.

Among twenty-two cases with protozoal infections referred to my laboratory for examination of the feces last fall there were three with *Councilmania* (reported elsewhere). In all three the amebae were numerous, both motile and encysted. Budding cysts are especially numerous after a saline, showing that gemmation in the intestine is a normal mode of multiplication for this ameba. In all three cases motile amebae with ingested blood cells were frequent. A patient referred by Doctor Worthington who had had a secondary anemia recurrent after treatment has been entirely well after elimination of the *Councilmania* with stovarsol. A second case, referred by Doctor Banks, who had for years a severe lumbar myalgia and marked fatigability is also well, following stovarsol. A third case after, temporarily at least, getting rid of the amebae by stovarsol treatment which was not well tolerated, and was alternated with emetin, left observation without improvement. All three cases have had a series of daily stools examined and found negative before being pronounced free of the infection. And in each case the fecal examination was a last resort, as it perhaps should be at the present time, the better established foci of infection being ruled out first. By so proceeding we can feel more certain of the reality of the protozoal source of the toxic absorption, and the relief of symptoms following elimination of the protozoa when it occurs permits us reasonably to conclude that they were the cause.

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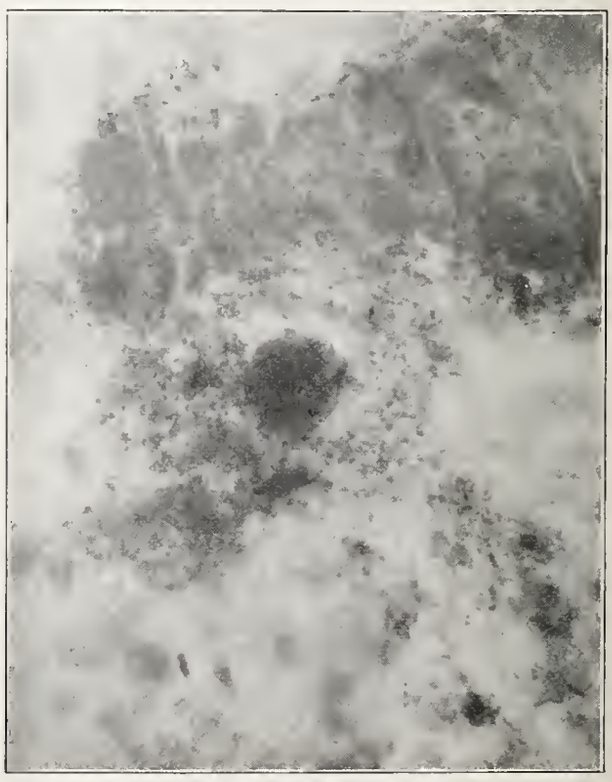

Fig. 3b—Same as 3a, but at different focal level to show the other three nuclei.

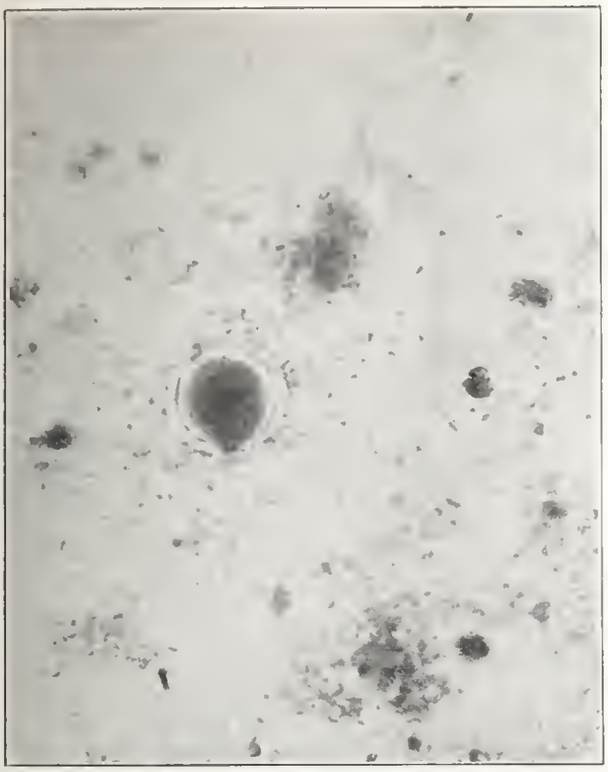

Fig. 4—Cyst, 17 mu, early stage of budding. Nuclei grouped near bud.

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DISCUSSION

T. H. T. Wight, M. D. (United States Veterans' Hospital, Palo Alto)—The paper on *Councilmania lafleuri* by Rawson J. Pickard, has been submitted to this laboratory by Professor E. M. Schultz of Stanford University for criticism.

That we may not be considered impertinent in undertaking such a review, we offer that we already have made some criticisms on this alleged organism—once in the *Proceedings of the Society for Experimental Biology and Medicine,* 1925, xxii, pp. 517-22, on two occasions in the United States Veterans' Bureau Bulletin, a paper read before the Society of Tropical Medicine last May, and a forthcoming article in the same society's journal.

It is a disagreeable task to criticize the careful work of another with whom one has no common basis of thought unless it be the search for truth by humble observers. This is exactly our position in regard to Doctor Pickard's paper. Whereas he accepts all of Kofoid's and Swezy's sweeping statements regarding the identity and pathogenicity of the organism known as *Councilmania lafleuri,* he gives us not one tittle of evidence that such an organism (if it has a real separate existence) has any pathogenic qualities whatever; the dietary evidence is mostly to the contrary. No one can say that because occasionally red cells may be ingested that this constitutes indubitable evidence of pathological function. It is true that *E. histolytica* does not ingest red cells in its normal habitat. It is only when dysentery supervenes and both the patient and the ameba are suffering from abnormal conditions that the free forms absorb any material that is most handy, including red blood cells. In vitro *E. histolytica* absorbs bacteria, and it certainly does not do this in the intestinal submucosa. Therefore considering *E. coli,* which is a harmless and possibly beneficial intestinal scavenger that absorbs bacteria and some protozoa, we may conclude that it may occasionally feed on red blood cells if any are present in the fecal garbage where it makes its home.

We are willing to agree with Doctor Pickard that there is a form of *E. coli* which under certain conditions shows great activity and clear-cut pseudopods—nor is this an *E. histolytica* with eight nucleated cysts—I think it possible that both Wenyon and Dobell would agree with this, although Dobell denies it in his earlier 1919 edition. The lack of uniformity in the progeny of the uniparental *Ameba Difflugia corona* would readily cover the slight observed differences between Kofoid's typical *Councilmania lafleuri* and *E. coli* with one exception, namely, "budding."

Now "budding" can be artificially produced. It is not a prerogative of *Councilmania lafleuri.* We have induced buds in *E. histolytica, I. butschlii,* and *E. nana.* Provided one has the necessary conditions buds follow as a matter of course. Has Doctor Pickard or Kofoid and Swezy ever seen the segregation of nuclear and cystoplastic material within the cyst prior to excystation? As a protozoological analogy this should be a necessary factor. With suitable preparation and high osmotic pressure as many as 90 per cent of the cysts may show buds. Some of these buds will contain as many as three nuclei, but the majority have none at all. Can anyone see an object in budding in an uninuclear cyst like *I. butschlii*? Why should an immature histolytica cyst bud? The answer is that they do not bud. We are viewing abnormal conditions. In a new host some such process may take place, but only in a mature cyst, and in this case the cytoplasm will segregate itself around its own individual nucleus and there will be well-marked division lines. That occasionally budding may take place in the original host is no more impossible than that a woman may have an abortion, but one would not say we have a new species of woman.

Perhaps we may be permitted to quote the conclusions given in our paper in the *Proceedings of the Society for Experimental Biology and Medicine,* 1925, xxii, pp. 517-22:

It is suggested that there are at least two types of *E. coli;* one—of which a perfect description is given by Kofoid under the name of *Councilmania*—charac-

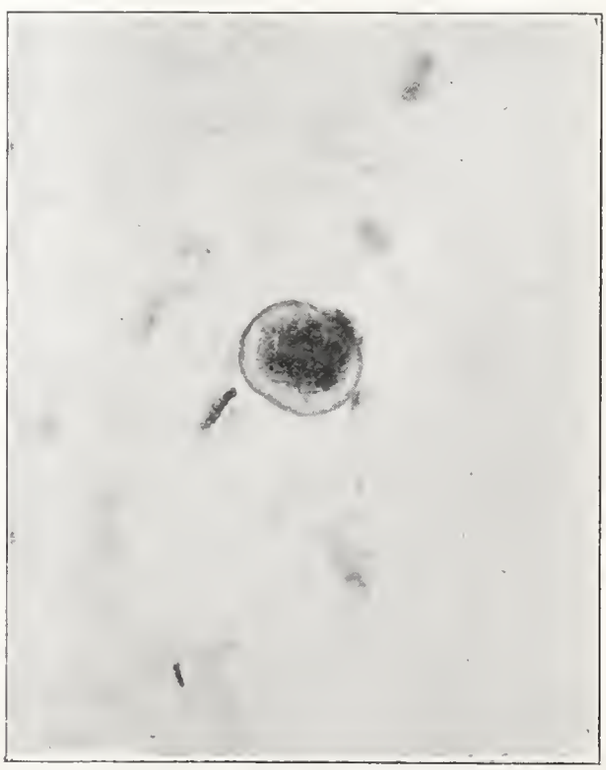

Fig. 5—Cyst, 18 x 21 mu, six of eight nuclei visible, extrusion of ridge of chromatoidal matter, early stage of budding.

terized by possessing clear blade-like pseudopodia, well differentiated from the endoplasm, occasionally of exceptional motility, which may be retained even after prolonged centrifugation in cold tap water in the process of concentration. This type seems to have a tendency to the formation of irregularly contoured, thick-walled cysts. Such cysts as these are easily fractured by immersion in a hot mercurial solution such as Schaudinn.

The other type is more sluggish, and has not the clear blade-like pseudopodia in the free state. By concentrating a sufficient number of the cysts of this type and subsequently fixing in hot Schaudinn, some at least of the cysts will probably give the appearance to which Kofoid and Swezy have applied the name *Councilmania.* While Kofoid's *Councilmania* would seem to refer to the first type mentioned, if our reasoning be correct, there is either no such species as *Councilmania* or there is no such organism as *E. coli.* For all organisms that we have been accustomed to include under the term *E. coli* are potential *Councilmania* on the only real distinction made between the two organisms, namely, budding; and this latter phenomenon depends on purely physical attributes and artificial outside causes.

Condition of internal stress produced by osmosis in combination with a rigidity of the cyst wall may be the necessary factors in producing buds. Whatever be the cause, budding forms are not seen in the fresh specimen, or, if they should be, may be ascribed to a pathologic or abnormal physical condition.

Amebae of the type described as *Councilmania* are exceedingly common. There is no evidence that they have pathogenic qualities. Their normal diet would class them as fecal scavengers.

In a stool from which stained specimens of budding cysts may be easily made, it is impossible to find any detached "amebulae"—which leads one to infer that budding is produced artificially in the process of fixation and staining. Many buds may be found in direct smears from concentrated cysts after fixation in hot Schaudinn, though none at all are to be seen in fresh saline smears from the same original material.

Budding of amebulae in the bowel of the host is contrary to natural reason. It would be suicidal and is therefore impossible, except as a pathological process. That some such process takes place after ingestion of the cysts by a new host is, of course, possible or even probable.

If budding be not a normal process within the bowel, there is no excuse for the naming of a new species. On the other hand, if budding be a natural process *E. coli* must be the rarest of intestinal inhabitants and *Councilmania* the commonest, and it will be necessary to give names to new species of intestinal amebae bearing the same relation to *E. nana, I. butschlii* and *E. histolytica* as the so-called *Councilmania lafleuri* does to *E. coli.*

❊

Herbert Gunn, M. D. (350 Post Street, San Francisco)—The subject of this paper has been of especial interest to me, as I have been doing more or less work with it since Kofoid and Swezy published their article in 1921.

In 1922, in the *Journal of Parasitology,* 9-24, I published an article on the subject based on a study of over twenty cases in which I stated that it was impossible to accept as correct any of Kofoid's conclusions. Since then I have examined several hundred cases of coli infection, both clinically and microscopically, with the result of being more firmly convinced that there is no warrant for adding a new ameba to the list.

A careful comparative study of unstained, iodin, eosin and hematoxylin stained specimens of cysts should show, it seems to me, anyone with a "prepared open mind" that the so-called budding is produced artificially.

In such a study great care must be used to avoid pressure as the artefact can readily be produced by it. There is considerable possibility of error if one attempts to classify amebae in the vegetative stage, as *E. coli* may be extremely active under some conditions with distinct hyaline pseudopodia.

Usually *E. Coli* are very sluggish and inactive, but the cysts from these sluggish forms can be demonstrated as *Councilmania lafleuri* if it is so desired.

Definite data as to the structure of amebae must be carried out in stained specimens and here the difficulties multiply. Understaining, overstaining, the effect of heat, pressure and chemicals, must all be taken into consideration if errors are to be avoided.

Whether or not red blood corpuscles may occasionally be seen in *E. coli* I do not know. In my own examinations I do not find them. Occasionally bodies somewhat resembling red cells are seen which are probably vacuoles. The definite red corpuscles as found in *E. histolytica* I never find in *Coli.*

If Doctor Pickard is, as I believe to be the case, wrong in his premise and there is no such parasite as *Councilmania lafleuri,* there remain for further discussion the symptoms ascribed to *E. coli. E. coli* has been generally accepted as a harmless organism and there certainly has been no evidence produced to show that it is pathogenic.

The fact that occasionally a patient infected with *E. coli* is relieved of symptoms upon being cleared of the parasite is suggestive but not conclusive of pathogenicity. On the other hand the majority of patients harboring *E. coli* if cleared of the infection show no improvement.

It is possible that *E. coli* may under certain conditions produce symptoms, but it certainly occurs in but a very small percentage of those infested.

There certainly is no justification for the blanket incrimination of *E. coli* for all of the various symptoms mentioned by a small group of writers during the past few years.

❊

John V. Barrow, M. D. (701 Westlake Professional Building, Los Angeles)—Doctor Pickard's paper is a real contribution to the subject of protozoology in its relation to clinical medicine.

When one consults the textbooks on protozoology there is considerable confusion in picking out the salient points of pathogenic ameba as featured by the drawings in the text. There is certainly a lack of cystological diagnostic skill demonstrated in most of these works. The drawings are so inadequate in most systems of medicine that one is better qualified to make his diagnosis on the context rather than the drawings.

In bringing the *Councilmania lafleuri* to our attention Doctor Pickard helps to clear up much confusion. I am glad he does not find its budding an artefact. In our laboratory we have tried many times to produce this condition in *Ameba coli,* but have been absolutely unable to do so. And we have never been able to understand why the artefact should not be produced in all ameba if it could be easily produced in one, namely: the *Ameba coli.*

I am convinced of the correctness of Professor Kofoid's work on this ameba, and its corroboration by men like Pickard is certainly a source of satisfaction. I am glad he places it in the pathogenic class. Even if it has no powers of invasion the clinical picture of these patients more than strongly suggests the toxic action of a foreign protein furnished adequately by the dead bodies of these organisms.

Opponents claim this is no proof of pathogenicity. However, a mixture of arsenic, sugar, sodium chlorid, etc., would be considered poisonous if a clinical picture were that of arsenical poisoning, and the substance so taken by the patient would be held as extremely suspicious material until thorough analysis proved it otherwise. And inability to analyze the chemical mess would not take away from us the belief that we were dealing with metallic poisoning, and we would all say, very probably arsenic.

You all know we are unable to produce these ameba in pure culture separated from all extraneous organisms. Until that is done we must hold in abeyance all of these cock-sure, definite statements that such an organism has no pathogenicity whatsoever. This last

assertion is a step farther from proof than a positive assertion of the pathogenic qualities of these organisms.

DOCTOR PICKARD (closing)—Why is it that so many of the physicians working with the human intestinal parasites who are quite ready to assert their ability to distinguish *Councilmania lafleuri* as a "type" or "form" of *E. coli* are unwilling to acknowledge that this form is a distinct species? Are we so little scientists that we are affected by the present-day democratic resentment of authority! Perhaps it would have been easier if Professor Kofoid had placed *Councilmania* in the genus *Entameba* with the two species which resemble it, and each other, as much as they differ from one another. This aside from the question of budding. Kofoid, and Mathis and Mercier have followed the process of excystation and the wandering off of small amebae in fresh specimens. The budding forms of *Councilmania* do not occur in every specimen containing cysts, and in some carriers are uncommon even in a series of specimens. The diagnosis is made chiefly on nuclear structure, as it is for the other amebae.

I do not use hot Schaudinn's for fixation, but alcoholic Bouin's solution at room temperature. Even hot Schaudinn's does not produce buds in *E. histolytica* or *E. nana* for most workers. If suddenly it did so, it would seem advisable to revise one's technique. I do think that Wight and Prince have explained the discrepancy between the number of budding cysts found in fresh and stained preparations. Quoting a paper to appear in the *Annales de Parasitologie,* the many cysts with buds or bottle-neck protrusions in which there is no nucleus may very likely be due to rupture caused by osmotic tension in a cyst which is about to gemmate. In their paper in the *American Journal of Tropical Medicine,* Wight and Prince are so insistent that the buds are artefacts that they overlook Kofoid's description of the nucleus of *Councilmania,* which is nevertheless well shown in their really marvelous microphotographs, even of the trophozoïtes, in which the differential diagnosis of amebae is especially difficult due to variation in individuals. No, the budding is not the "only real distinction," and even if all the buds were artefacts, their presence in *Councilmania* cysts alone would remain diagnostic for nearly every worker. As to the rarity of *E. coli,* during the year I have found five *E. coli* infections, and six *Councilmania* (of which five were definitely pathogenic). The pathogenicity of the organism is sufficiently proved to patients who lose their symptoms along with their parasites as well as to those who, like the second case mentioned, who after a year's good health has recently had a relapse of her lumbago and has stools again teeming with *Councilmania.*

The mechanism of protozoal pathogenicity is speculative. Doctor Barrow's theory is reasonable, and objections, if backed up with experimental or other facts, will receive serious consideration.

ABERRANT RENAL ARTERY*

By FRANKLIN FARMAN, M. D.
Los Angeles

DISCUSSION *by E. Spence De Puy, M. D., Oakland; Frank Hinman, M. D., San Francisco; Walter B. Schwuchow, M. D., Los Angeles.*

THE renal arteries come off one on each side of the abdominal aorta, a little below the superior mesenteric and first lumbar arteries, on a level with the first lumbar vertebra.

ANATOMY OF THE NORMAL RENAL BLOOD SUPPLY

On the right side the artery passes behind the inferior vena cava, is somewhat longer, and on a slightly lower plane than the left. In front of each is the corresponding renal vein, and behind, at the hilus of the kidney, is the commencement of the ureter. Each artery as it enters the hilus of the kidney usually divides into three main stems, an upper, middle, and lower, which pass to the corresponding portions of the kidney pelvis. Each of these primary stems then divides to form seven to nine secondary branches, the majority of which pass anterior to the pelvis, while a few are posterior to it. No anastomoses take place between the branches of the anterior and posterior secondary stems, forming the so-called plane of arterial division.

Each renal artery gives off the following branches:

(*a*) Inferior suprarenal, which ascends to the suprarenal body.

(*b*) Capsular or perirenal branches to the capsule of the kidney and perirenal fat.

(*c*) Ureteral branch to the upper end of the ureter.

EMBRYOLOGY OF THE VASCULAR SUPPLY OF THE PERMANENT URINARY SYSTEM

In its embryologic development the tissue, which gives rise to the permanent kidney, passes through a complicated series of changes, some of which are progressive, others regressive. The permanent kidney is preceded by the development of two earlier excretory organs, the pronephros, and the mesonephros. Of these the pronephros is the first to develop; it is always rudimentary and degeneration sets in and is completed early. The mesonephros makes its appearance shortly after that of the pronephros, attains a large size, and is an important organ during embryonic life. The few remnants of it which remain enter into the formation of the genital apparatus. Before the mesonephros has attained its full development the metanephros or permanent kidney makes its appearance and becomes a functional organ while the mesonephros is undergoing degeneration.

The vascular relations in that portion of the body in which the urogenital system arises are quite different in early fetal life from those of later fetal and postfetal life; vessels which are prominent at the stage of development when the kidney is most susceptible to mechanical influences later become small or disappear completely. The complicated series of changes through which the urogenital system passes gives opportunity for a variety of permanent developmental anomalies. The vascular supply of the abnormal and congenitally displaced kidney usually deviates from the normal.

The vascularization of the kidney is effected after the organ reaches its permanent position. The renal artery is derived from the plexus of periaortic vessels. This plexus has many roots from the aorta which affords an opportunity for the change from an embryonic pelvic position to its permanent one. The channel for the permanent renal artery is selected mechanically. Should the usual channel be occluded, a route not so convenient may be utilized, hence the chance for

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variation and anomalies in the blood supply to the kidney.

Bremer states that the anomalies of the renal artery depend on vessels present in the embryo before the aorta and its larger branches develop mesodermal coats. There are no "late branches." Certain anomalies are due to the persistence of the early renal blood supply most frequently seen with pelvic kidneys, that is, the renal artery as a branch of the iliac, inferior mesenteric or middle sacral.

FREQUENCY AND TYPES OF VASCULAR ANOMALIES

From the studies of Eisendrath, Straus, Seldowitsch, Piersol, Quain, and other anatomists, the frequency and types of anomalous renal vessels have been determined.

Variation in both the site of origin of the renal artery and in its mode of distribution to the kidney occur. It may be said that vascular anomalies of the kidney may be found in from 20 to 25 per cent of bodies. Quoting Schultz's analysis of the studies made by Eisendrath and Straus on 200 kidneys, and by Eisendrath alone on another series of 218 kidneys, in 71.1 per cent the renal arteries were normal; in 4.2 per cent an accessory renal artery arose directly from the aorta to the upper pole of the kidney; in 8.0 per cent an accessory artery ran directly from the aorta to the lower pole; in 0.48 per cent an artery to the lower pole was derived from the iliac arteries; in 0.24 per cent the renal artery itself gave off a branch to the lower pole.

Types of anomalies of the renal artery include:

(*a*) Superior polar artery arising from the main renal artery.

(*b*) Superior polar artery from the aorta.

(*c*) Inferior polar from the main renal artery.

(*d*) Inferior polar from the aorta.

(*e*) Inferior polar arising from the iliacs (common and internal). In addition may arise from the middle sacral or even inferior mesenteric arteries.

Anomalies of the retropelvic vessels and of the renal veins occur, but are of less clinical or surgical importance. As pointed out by Eisendrath, the posterior aspect of the renal pelvis is not avascular as formerly believed and may be crossed by both arteries and veins. It is common to find the single small renal artery divided into equal-sized pre- and retropelvic branches, also a fanlike distribution of the vessels is frequent. Occasionally the main renal vein is entirely retropelvic.

PRODUCTION OF HYDRONEPHROSIS BY ABERRANT VESSELS

A slowly developing hydronephrosis may result from compression or distortion of the ureter by an anomalous vessel. These abnormal vessels usually compress the upper part of the ureter at, or near, its junction with the pelvis. As a rule these obstructing aberrant vessels go to the lower pole of the kidney or to the inferior margin of the hilum, and may pass either anterior or posterior to the ureter. Borelius believes that abnormal mobility or sagging of the kidney may be an important additional factor in hydronephrosis due

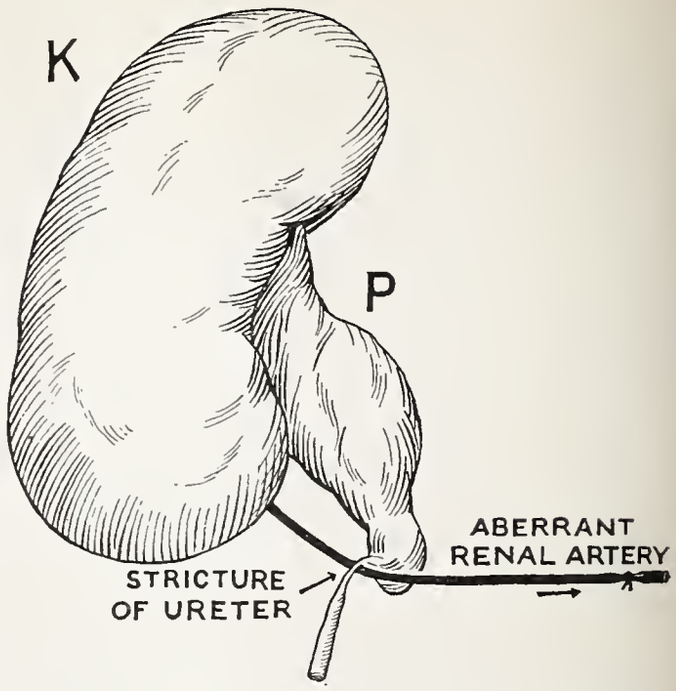

Diagram showing hydronephrosis and stricture produced by pressure from aberrant renal artery.

to abnormal vessels. Albarran (cited by Young) states that "whether the abnormal vessels pass in front or behind the ureter, one is unable to understand how it is able to kink the ureter in order to cause hydronephrosis. On the contrary, a hydronephrotic kidney may descend and the ureter become encroached upon by vessels which cross either in front or behind it." Klukow, in 1912, collected fifty-seven cases of hydronephrosis due to abnormal vessels.

Furthermore stricture of the ureter at the site of compression by the anomalous vessel has been found not infrequently. Young lists four such cases in a series of ninety-eight unilateral cases of hydronephrosis. Nephroptosis with aberrant vessels occurred one time in the same series.

DIAGNOSIS OF ABERRANT VESSEL

An anomalous renal vessel should be suspected in those cases of unilateral hydronephrosis produced apparently by some obstruction in the upper part of the ureter which cannot be definitely ascribed to ureteral stone, stricture, tumor, or nephroptosis. It is impossible to make a positive diagnosis of an anomalous vessel causing hydronephrosis before operation.

An atypical or accessory blood supply should be suspected in cases of abnormalities of the kidneys, such as the fusion forms (horseshoe), ectopic, and congenital malpositions. Furthermore any abnormality of one part of the urogenital system should put in mind the possibility of associated anomalies, especially as to variations in the vascular distribution.

SURGERY OF ANOMALOUS VESSELS

Simple division and ligation of aberrant vessels causing hydronephrosis has cured the condition in the majority of cases reported. The Mayo Clinic in 1909 reported twenty-seven cases of surgically treated hydronephrosis. Twenty of these were associated with accessory blood vessels. In order to prove the causative relationship, in thir-

teen of the twenty cases the vessels were merely severed and ligated and a cure of the condition obtained. In 1922 Kummer collected fifty-six cases in which an operation (ligation) upon the aberrant obstructing arteries had cured the condition.

In the author's case division and ligation of the accessory inferior polar artery causing hydronephrosis gave complete relief from symptoms (intermittent pain).

Quinby cautions against division of the larger accessory arteries to the kidney pointing out the danger of degeneration of that portion of the kidney supplied by it, since there are no arterial anastomoses. Belt and Joelson have demonstrated experimentally in dogs the degenerative process and scar formation in the kidney parenchyma incident to blockage of the blood supply. Kummer (cited by Belt) did not observe any evidence of necrosis of the kidney subsequent to vascular section in fifty-six reported cases.

In cases of ptosis of the kidney associated with aberrant artery it is possible to perform nephropexy without disturbing the vessel. Quinby advocates ureteropyeloneostomy in some cases where the ureter extends above and is compressed by the aberrant vessel.

In performing any operation upon the kidney anomalous vessels may be encountered. Their recognition and ligation may prevent serious or troublesome hemorrhage during operation or even afterward. Eisendrath suggests careful exposure of both poles of the kidney before nephrectomy or nephrotomy, and cautions against tearing or dividing adhesions or fibrous bands without first inspecting and palpating (pulsation) for the presence of supernumerary vessels.

From a clinical viewpoint the ligation of accessory renal vessels when indicated to relieve ureteral obstruction, to aid in mobilization of the kidney, and prevent hemorrhage during operation is a correct surgical procedure and may be done without serious, if any, permanent impairment to kidney function.

It should be remembered that in operations upon anomalies of the kidney, variations in the blood vessels are the rule, and should be dealt with as suits the special condition.

CASE REPORT

Miss C. H., an unmarried woman, 40 years of age, was referred by Dr. Walter B. Schwuchow. This patient had an aberrant renal artery which had caused a hydronephrosis.

The history extended back over a two-year period during which time she had experienced a great deal of pain in the right kidney area, for the most part of an intermittent "colicky" character, and which usually was accompanied by gastric upsets. There was an absence of bladder symptoms or hematuria. An operation for appendicitis had been performed about one year previous, and it is reasonable to assume that a mistake in the diagnosis might have been made on account of the right-sided pain.

This woman was small, rather frail in appearance, and weighed only ninety-five pounds. An unoperated cleft palate produced a nasal twang to her speech and recalls the fact of frequent association of anomalous development in the same individual.

An attack had been in progress one week, at the time the patient entered the hospital, and had produced considerable toxemia, which gave her a pallor and haggardness of expression often seen in uremia. The right half of the abdomen was sensitive and rigid, and there was extreme tenderness elicited upon palpation for the kidney.

Two complete urologic examinations pointed to a hydronephrosis of the right kidney. No urine was obtained from the right kidney at either time, and the catheter on that side twice met an obstruction near the kidney pelvis (it was determined at the time of operation that a stricture near the ureteropelvo junction existed). A pyelogram showed a partially filled, enlarged (hydronephrotic) pelvis with indistinct calyces. Plain roentgenograms were negative for calculus. The cystoscopic study showed a normal secreting left kidney.

With a diagnosis of surgical hydronephrosis and possible pyonephrosis, a right kidney exploratory was performed. Under a gas-oxygen anesthetic the right kidney was easily exposed and mobilized through the usual oblique lumbar incision.

A large (one and one-half times the average size) smooth-surfaced kidney of normal texture was found. The kidney pelvis itself was about two times the normal size and filled with retained urine. The walls of the pelvis were thickened. The ureter joined the pelvis on its lower side near the inferior margin of the kidney and was distorted or kinked by a large aberrant inferior polar artery coming from the aorta which hooked back of the ureter. There was a definite thickening, sclerosis and narrowing of the ureter (stricture) at the site of compression by the anomalous artery.

The aberrant blood vessel was severed and ligated, the kidney replaced, and closure made, leaving a drain to the perirenal space.

Recovery from the operation was rapid (twelve days in the hospital), and resulted in prompt and complete relief from symptoms. There has been marked improvement in the general health with gain in weight and vitality to a state of apparent normal health, now five months postoperative.

1401 South Hope Street.

DISCUSSION

E. Spence De Puy, M. D. (532 Fifteenth Street, Oakland)—Dr. Farman's paper again calls attention to a condition which we must always have in mind. The urologist will, of course, generally be alert to discover the probability of aberrant vessels responsible for pain where there is a movable kidney.

When patients are as frequently referred for urological study as they are today, undoubtedly a correct diagnosis is more frequently made and a wrong surgical procedure thereby avoided.

Frank Hinman, M. D. (384 Post Street, San Francisco)—Doctor Farman has very well emphasized the importance of aberrant vessels to the kidney. Their surgical importance is quite obvious to anyone doing renal surgery, as they should be recognized well in advance of their division in the enucleation of the organ. More recently they have, furthermore, become recognized as of importance as a factor in the causation of hydronephrosis. The profession, however, has seemed to have lost sight of the importance of movability in connection with aberrant vessels, and it is probably more the movability than the aberrant vessel that gives rise to the hydronephrosis. Anomalous vessels are to be considered with respect to kidneys in normal position as well as kidneys in abnormal position, and their significance as a factor in obstruction, pain, or periodic attacks of infection, is greater in connection with the abnormally placed kidney. They are also often a factor in cases of double pelves producing a hydronephrosis of the upper of the two pelves. In connection with the treatment of hydronephrosis in which an aberrant vessel is found in association, the fact that all arteries to the kidney are end arteries should be remembered, and there are cases in which it would be advisable to divide the ureter and resuture it rather than to divide the artery. In cases with

marked infection this, however, would not be a safe procedure because of the risk of a persistent urinary fistula.

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Walter B. Schwuchow, M. D. (4759 Hollywood Boulevard, Los Angeles)—Greater care in the differential diagnosis of appendix and kidney lesions is necessary, as appears in this case The history of pain in the right side lasting several days over a period of a year led to a diagnosis of appendicitis, and an operation revealed no pathology. The attacks recurred, and one sufficiently long brought her to the hospital for study. The x-ray report showed a distended kidney pelvis with probable destruction of kidney structure, while at operation a normal kidney was found.

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Doctor Farman (closing)—Probably no other organ in the body is more subject to anomalous blood supply than the kidney, this being due to the complicated series of changes through which the urogenital system passes in its embryologic development.

The importance of these vascular anomalies as a factor in the causation of hydronephrosis has been mentioned by Doctor Hinman. Likewise De Puy refers to the production of pain in movable kidney associated with aberrant or obstructing blood vessels.

The discovery and proper disposition of these abnormally placed renal vessels is essential to successful and conservative kidney surgery.

CHEST SIGNS SIMULATING ACTIVE PULMONARY TUBERCULOSIS*

By Edwin A. Montague, M. D.
Livermore

Discussion *by Frederick Eberson, M. D., San Francisco; Percy K. Telford, M. D., Ahwahnee; Joseph W. Cook, M. D., Banning.*

PHYSICAL examination of the chest often discloses signs suggestive of, but not produced by, active pulmonary tuberculosis. Unless rightly interpreted these signs may lead to errors in diagnosis.

MALFORMATIONS

Depressions above the clavicle, particularly if unequal or unilateral, are regarded as suggestive of pulmonary tuberculosis at the apex of the lung. In the classification of pulmonary tuberculosis adopted by the American Sanatorium Association, a slight depression above a clavicle is mentioned among the signs of early or minimal pulmonary tuberculosis. Bray,[1] of Raybrook, New York, in a study of 153 healthy adults and of 150 patients with incipient pulmonary tuberculosis, concluded that the value of this sign was open to question and stated, "These depressions are always present in emaciation and loss of weight, irrespective of cause. The depressions are always prominent unilaterally and cannot be differentiated in health from pulmonary tuberculosis." In a recent study of ten patients having tuberculosis in the left apex of the lung with no demonstrable infiltration of the right lung, I found seven of these cases had a depression on the healthy side.

Winged scapulae and unilateral drooping of shoulder are signs given by some diagnosticians as indicating late pulmonary tuberculosis. Far advanced patients usually have one or both of these signs, but many individuals who have normal chests exhibit this anomaly.

If the *shape of the thorax is changed by deformity* the condition may be congenital and, if slight, is difficult to detect. One side of the chest is prominent anteriorly and posteriorly and flat along the axillary line. A clavicle may show depression above, the vertebrae may be displaced laterally and sometimes are rotated anteroposteriorly. The result is prominence of the ribs on the convex surface and a slightly forward position on the concave surface. This bulging in and out deformity causes deficient expansion and a lagging of one side of the chest. Tactile fremitus is usually increased, but it is decreased if compensatory emphysema is present over the enlarged side of the deformity and is usually decreased over the compressed area. The percussion note is impaired, the breath sounds are exaggerated over the emphysematous side and decreased on the compressed side. In some patients, râles are elicited owing to the emphysema, or some adventitious sounds may be produced from other causes. These signs, reinforced by constitutional symptoms with added languor, are often misleading.

A deformity of the sternum or of the anterior ends of the ribs will cause a flattening or marked depression in the upper chest similar to that caused by a diseased lung or by a massive fibrosis. Unilateral atrophy of muscles over the chest wall, whether congenital or caused by some wasting disease other than tuberculosis, will show, on inspection, a unilateral depression, and the percussion note between the sides is impaired. If the individual happens to be a mouth breather or has nasal obstruction or catarrh, râles that resemble those of active pulmonary tuberculosis often can be heard in the apices, after expiratory cough and inspiration.

RÂLES

Friction râles occur in the pleura around the pericardium and are an indication of dry pleurisy of the lingula and of other parts of the pleura in contact with the pericardium. These râles are heard during both phases of the respiratory act. In many cases it is quite difficult to state positively whether these adventitious sounds are of pulmonary or pleuritic origin. If they are found over an extensive area it may be assumed they are pleuritic in origin, since much involvement would cause severe constitutional symptoms, while dry pleurisy may persist for years without impairing the general health.

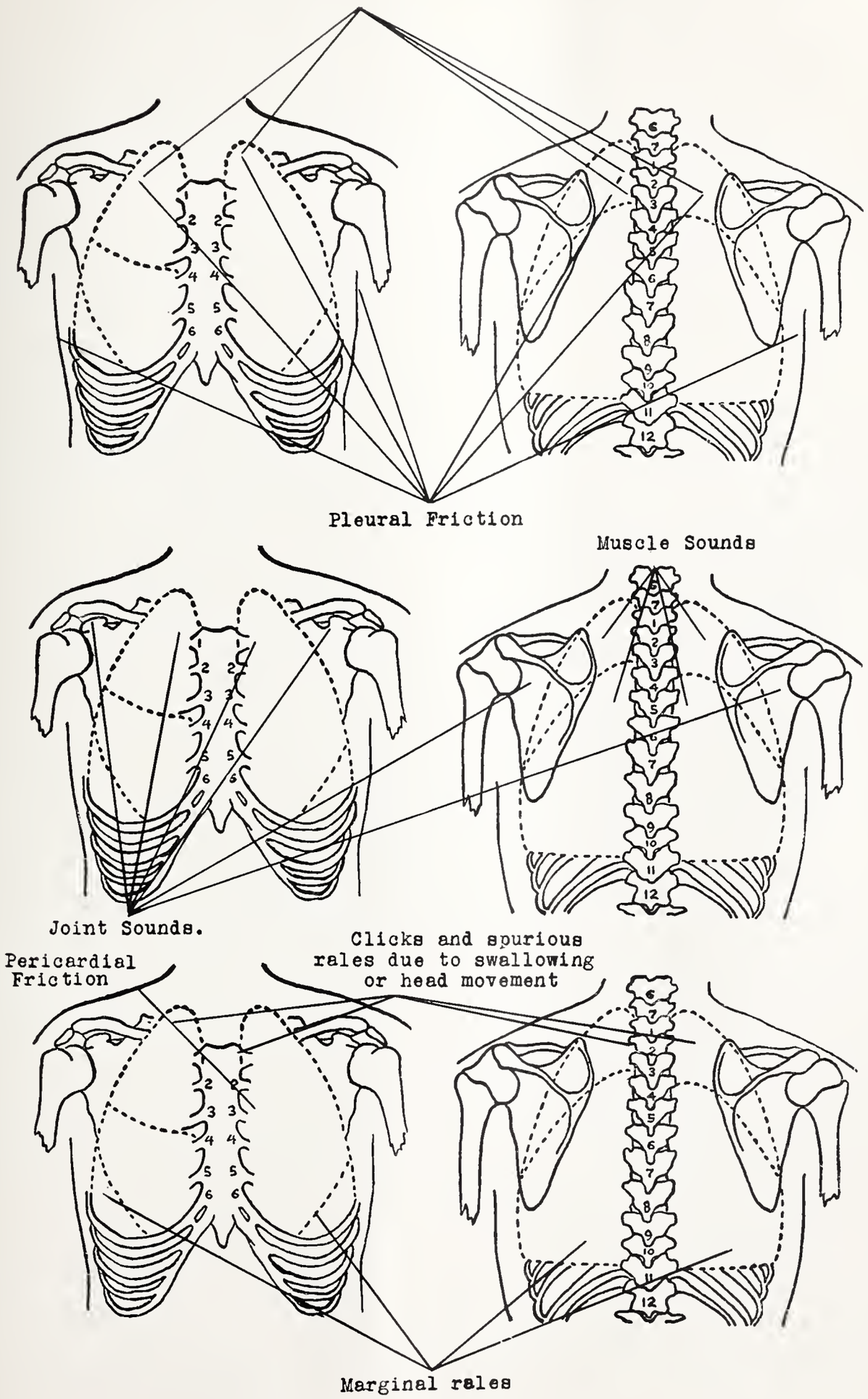
Aortic aneurysm, with pericarditis, plus syphilis, gives a physical picture similar to that of active pulmonary tuberculosis. Someone has said that most syphilitics have râles in the chest. Personally this also has been my observation, but I can give no explanation as to the etiology of these râles.

In many *bedridden patients,* râles may be detected which are caused by imperfect expansion of the lungs, not due to disease.

In some patients, *after cough* and at the end of inspiration or when the individual swallows, clicks and spurious râles occur. These adventitious

* From the United States Veterans' Hospital Staff, Livermore.

Râles Heard in Chest, Found in Catarrh, Nasal Obstruction and Mouth Breathers



Charts illustrating sites of spurious râles.

sounds are heard above the fourth dorsal spine and are often mistaken for an active lesion of the lungs, especially if these râles are accompanied by constitutional symptoms associated with focal infection or some obscure disease.

Marginal râles heard in the lower margin of the lungs are caused usually by a stripping of the pleura from the diaphragm. These usually disappear after a few deep breaths, though at times persist indefinitely, but, as they occur in the bases of the lungs, do not give much concern if one is looking for pulmonary tuberculosis.

In auscultation, *crepitation of the dry skin and hair* on the chest is annoying, and often it is necessary to soap or oil the chest to eliminate such sounds.

The late Colonel Bushnell,[2] in his book, "Epidemiology of Tuberculosis," devotes considerable space to *spurious râles, muscle and joint sounds,* and attributes their cause to muscular contraction, especially the trapezius and pectoral muscles when raising and lowering the shoulder in the act of very deep breathing. He also states that sounds originating in the sternum at the second costal cartilage and along upper dorsal vertebrae may lead to error. They resemble the medium and large râles of pulmonary tuberculosis and are accentuated by cough. These were a potential source of error during the late war, and those engaged in tuberculosis work have observed errors in diagnosis possibly caused by these adventitious sounds. Normally the breath sounds above the fourth rib and sixth dorsal spine on the right are slightly bronchovesicular, and, if by chance there is a slight deformity from early rickets or other causes, the bronchovesicular breathing is apt to be very pronounced, and, if joint and muscle sounds are present and persist, barring the x-ray and laboratory examinations, a hurried diagnosis of active, pulmonary disease may be made.

Dr. J. T. King, when examining soldiers for tuberculosis, looked for joint and spurious sounds. He kept notes on 819 men who had spurious râles in the upper part of the chest. Most of these sounds emanated from the scapular, costosternal, sternoclavicular and vertebral articulations and from the joints of the shoulders anteriorly. Two per cent had persistent, constant, apical clicks or crackles of the type which often prove confusing. A number of these men were hospitalized for active, pulmonary tuberculosis, but, after observation, were told they did not have pulmonary disease. It surprised them, as they had been diagnosed tuberculous and hospitalized for months for active, pulmonary tuberculosis.

Bruns [3] maintains that râles have always presented the most perplexing signs in the physical examination of the lungs. Râles elicited by expiratory cough and inspiration are generally accepted as an important sign of active pulmonary tuberculosis. He says showers, or fine and medium râles of equal size occurring at the end of a full inspiration, or the so-called coughing râles, are not always associated with active, inflammatory process in the parenchyma or bronchi, but may be due to conditions such as *fibrosis, atelectasis, pleurisy, postinfluenza, pneumonia, or of tracheal or bronchial origin,* and cannot be said to be associated with any particular disease or pathological condition.

In the examination of patients, not infrequently, as the pulmonary lesion clears up and heals, the râles disappear, but in many cases these persist indefinitely after the disease has become arrested and apparently cured and the radiograph reveals fibrous tuberculosis, in which event the râles of the cured case are identical with the râles of the active one. If there are no more supporting clinical data, the râles heard in these cases have no significance.

It is impossible for the skilled physician to tell by the shape of the thorax, mobility and physical signs whether there is a fresh exudative process or an old scar or whether there has ever been any pulmonary tuberculosis unless substantiated by complete history and symptoms such as elevations of temperature, increased rapidity of pulse, fatigue, languor, loss of weight, correlated with laboratory and x-ray findings.

Modern experience has greatly discounted the importance formerly attached to physical signs in active pulmonary tuberculosis.

United States Veterans' Hospital.

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DISCUSSION

FREDERICK EBERSON, M. D. (University of California Hospital, San Francisco)—The review by Doctor Montague of puzzling chest signs simulating active pulmonary tuberculosis emphasizes the difficulties encountered in physical diagnosis of chest diseases. One is at a loss to decide which does the greatest harm, a diagnosis of tuberculosis when it does not exist or the failure to diagnose its presence At all events, the criteria will establish either a poor or a reliable guide for the practitioner. Perhaps most of these pitfalls may be avoided by paying more attention to clinical evaluation of the history, signs and symptoms as a whole than to a few findings.

Laboratory aids, of course, have their important function also and the use of tuberculin should be encouraged. The problem of diagnosis in tuberculosis has been simplified greatly in recent years by the judicious application of the subcutaneous diagnostic tuberculin test. The method, which is simple and safe, has proved its value in the hands of those who understand and follow the exact technique. Better criteria can hardly be found than those of constitutional and focal reactions attending the injection of small doses of tuberculin in patients with suspected tuberculosis that cannot be proved beyond doubt.

Although no mention of it has been made in Doctor Montague's article, another point may be of interest in connection with the differential diagnosis of pulmonary disease. In practice we very often see patients with physical signs simulating pulmonary tuberculosis, usually of the right top. A moderate degree of constitutional disturbance is often present and signs and symptoms seem to warrant a diagnosis of tuberculosis. The x-ray film in such cases usually shows a small patch of what appears to be pulmonary involvement. Invariably, however, on closer question-

ing, one learns that these patients suffer from postnasal discharge and some form of upper respiratory involvement. A tuberculin diagnostic test made according to the standard technique as practiced at the Trudeau Sanatorium results negatively and, with the clearing up of upper respiratory difficulties in such persons, the x-ray picture no longer shows the peculiar focus previously diagnosed as tuberculous.

Doctor Montague concludes that modern experience has greatly discounted the importance formerly attached to physical signs in active pulmonary tuberculosis. This statement may be interpreted in different ways. Presumably the diagnostician is expected to use rare judgment at all times.

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Percy K. Telford, M. D. (Ahwahnee Sanatorium, Ahwahnee)—This paper, by its elaboration of signs simulating those of tuberculosis, emphasizes again the importance of considering every item of information regarding the patient in making the diagnosis. We have been frequently warned against the custom of the past of regarding typical râles as evidence of active tuberculosis, and this point is well covered here. The râles of spirochetosis might be added to this list of spurious râles that sound typical, for I find these most confusing. However, a routine of diagnostic maneuvers that places the search for râles as the last step facilitates identification and proper evaluation of râles. A previous survey of the breath sounds is particularly helpful.

A wrong impression might be gained from Doctor Montague's conclusions. The value of physical signs seems to be discounted too greatly. The difficulties encountered in the diagnosis of tuberculosis are comparable to those in other fields of medicine. The suspicious, or seemingly positive signs, unsupported by symptoms or laboratory findings require a search for the real cause, but their great aid cannot be denied and the development of skill in eliciting these signs should be encouraged. An enumeration of the pitfalls encountered, as set forth in this paper, makes for more accurate interpretation of physical signs. That is no doubt the purpose of the paper and the impression that these signs might safely be neglected is not meant by the author.

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Joseph W. Cook, M. D. (Banning)—I think Doctor Montague's article is very timely, as I feel that every man doing tuberculosis work is very much puzzled at times as to what certain signs mean. Some patients are difficult to examine: for some have heavy muscles, some bony chests, some hairy chests, and some cannot let their bodies or chests go, cannot relax, but tighten their chest muscles and, on coughing, start so much vibration that all kinds of râles can be heard. Some swallow persistently, and I now warn my patients that a wrongly timed swallow may send them to a sanatorium with a diagnosis of pulmonary tuberculosis.

I presume that every man who does tuberculosis work frequently faces the situation in which a patient informs him that his doctor says that he has a spot or cavity somewhere in his lungs, when the specialist can find nothing. Men who do only x-ray work I feel are somewhat prone to diagnose tuberculosis from hilum shadows and tell patients they have tuberculosis. In such a situation, one is likely to question one's own judgment or ability and perhaps acquiesce, but I feel it is only right to examine the patient on two or more occasions and then say frankly that you can find no evidence of tuberculosis.

In Doctor Montague's assertion that "modern experience has greatly discounted the importance formerly attached to physical signs in active pulmonary tuberculosis," I feel that he undoubtedly refers to the border-line signs, such as dropped shoulder, depression above and below clavicle, marginal râles, muscle and joint sounds, etc.; and he has rendered us a service in reminding us of this fact which will keep us from snap diagnoses.

Once again it may not be out of place to recall the five cardinal signs given by Lawrason Brown by recognition of which 95 per cent of cases of tuberculosis can be definitely determined: (1) positive sputum; (2) definite hemoptysis; (3) definite pleurisy with effusion; (4) definite localized râles on cough above level of third rib at apex; (5) definite x-ray changes in same area.

I would call attention to the use of the word "definite" by Lawrason Brown. He apparently would condemn no one to a sentence of tuberculosis on any indefinite signs. Only one of his five cardinal points has to do with physical signs, and that sign must be so definite that it allows of almost no doubt.

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Doctor Montague (closing)—It has been the rule with the staff of this hospital to give the five cardinal points, as referred to by Doctor Cook, consideration, with special emphasis on definite, localized râles and x-ray changes.

PLASTIC SURGERY OF THE FACE*

By J. Paul de River, M. D.
San Francisco

Discussion *by George Warren Pierce, M. D., San Francisco.*

SKIN-GRAFTING and the method of transferring the skin are the paramount problems encountered in the majority of plastic operations. The selection of the site from which the skin is to be taken and the condition of the area to which it is to be transferred are factors that require careful study.

GENERAL PRINCIPLES IN PLASTIC SURGERY

For the purpose of description we may say that all skin flaps consist of two parts—the pedicle, used chiefly for carrying the nourishment to the graft, and the part to be used for the graft itself. Skin grafts are classified under three main types, namely, the detached, the pedicle, and the tube pedicle.

The detached graft is of great value in repairing small defects where an abundant blood supply is furnished to the surrounding parts. It is especially useful in plastic work about the head and face.

In restoring an eye socket the detached Thiersch graft taken from the arm or thigh after Esser's technique, lends itself admirably. Also we can be reasonably sure of its taking. This, too, holds good in relining the mastoid and middle ear cavities. The detached, full-thickness graft, as described by Wolfe, is of value in repairing brows or lids where it is desired to transfer skin carrying the hair follicles. The success of the detached graft depends on two things, namely, an abundant blood supply to the region and careful approximation of raw surfaces, assisted by the use of the pressure bandage or dental stent.

The simple pedicle graft should be used only for the repair of defects about the head and face because an adequate blood supply can be secured. This graft serves well in rhinoplasty, blepharoplasty, and cheiloplasty, its success depending on

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the nourishment and the coaptation of the edges of the wound. The chief disadvantage is the additional disfigurement caused by taking the skin from the face.

In dealing with wounds or disfigurements resulting from traumatic or pathologic causes, and where the loss of skin is great, the principle of tubing the pedicle, as described by Gillies and his coworkers, is undoubtedly the method of choice. In this method the skin may be transferred from any part of the body in one or several steps, as in the migrating or caterpillar grafts. In the latter method the source and direction of the blood supply is changed each time the existing free end becomes the base.

The limitations of the use of the tube pedicle graft have not been reached. It may be utilized in repairing feature loss to transfer skin from other regions, thereby eliminating further facial disfigurements. Ulcerated areas rendered clean, and burn contractures freed of scar tissue, can be repaired by the use of the tube pedicle flap. In the repair of not only the superficial parts but also where there has been a loss or destruction of deeper structures, these grafts may be fashioned so as to carry hair, blood vessels, cartilage, bone, fat, mucosa and connective tissue. With this in mind we can utilize this type of graft to repair nasal disfigurements. Bone or cartilage can be previously embedded in the graft and allowed to grow. In due time it is swung into place, the cartilage serving as the bridge. This method is also applicable to the reconstruction of the chin. Fat-bearing flaps from the buttocks may be used in the repair of the female breast following a radical amputation.

The judgment of the surgeon is a point that cannot be too strongly stressed. A thorough knowledge of the anatomy is essential, as the viability of the graft depends on the blood supply. Therefore it behooves the surgeon to understand the blood supply of the part from which the tube flap is to be fashioned. When possible a definite artery should be included in the flap. One should bear in mind the size of the flap to be taken, its length and breadth. The base should be as wide as any part of the flap, and the length varies with the width and thickness. This can be somewhat modified if the jump or interrupted tube flap method is employed. By so doing the graft is not dependent on its pedicle base alone for its blood supply, but receives an additional blood supply from the lateral attachments of the tube. We are further able to fashion tubes of considerable length, thus making possible the transfer of skin from distant regions.

The jump or interrupted tube flap method is as follows: Two parallel incisions are made through the skin, superficial and deep fasciae, as in the ordinary method, and carried three and one-half inches (nine centimeters). Then there is a jump of one-fourth of an inch (five millimeters). The incision is carried for another three and one-half inches and followed by another jump of one-fourth of an inch. This method enables one to prepare tubes of an indefinite length with a reasonable certainty of safety, because of the nourishment furnished the tube from its lateral attachments as well as the proximal and distal ends. In dealing with long tubes they are liable to become twisted. This method serves to immobilize them. At the desired time the small laterally attached areas are cut and sutured with fine catgut or horsehair. The proximal or distal end is detached and transferred to its new position.

PLASTIC PROCEDURES IN VARIOUS DEFORMITIES

Auricle Restoration—In considering the operative procedure for the restoration of an auricle, various methods have been tried and most of them proved disappointing. I have found that by using a modification of Szymanowski's technique a fairly good-looking ear can be constructed. He advises the use of the skin which is posterior to the auditory canal. The incisions are made posteriorly to the canal. The flap is dissected up and doubled upon itself posteriorly. It is then brought forward and placed in the desired position and sutured through and through so that the edges will heal together. The denuded area back of the newly formed ear should be skin-grafted before healing can be hoped for. Detached, full-thickness grafts were formerly used, but due to the lack of blood supply they did not always prove successful. However, if the tube pedicle flap from the side of the neck is used and the pedicle allowed to remain attached to the neck just below and posteriorly to the angle of the jaw, skin-grafting of the granulating raw surface may be handled with more assurance of success. In this manner sufficient skin can be removed from the posterior angle of the neck and swung up into place to cover the denuded area. The graft carries an adequate blood supply that assures its vitality. The neck skin is undermined and the edges closed with dermal and relaxation sutures of silkworm gut. At the end of ten days, or after circulation has been established in the graft, the pedicle is severed at its base or lower end. A small portion of the tube is split; one edge is attached to the side of the head, the other to the anterior superior end of the newly formed ear, after Szymanowski's method. The pedicle is again severed at its base and partially split throughout its length. The split or undersurface of the tube is sutured to the original postauricular flap, forming the helix. The lower or free end of the tube is sutured to a prepared area, posteriorly and inferiorly to the auditory meatus, and serves as the lobule of the newly formed ear. Provided the middle and internal ears are intact, it is surprising to note the increase in hearing, for the newly formed pinna aids materially in conducting sound waves to the middle ear.

Restoration of Eye Socket—An obliterated eye socket can be repaired, making possible the wearing of an artificial prosthesis. For this I use the following procedure. The lid margins, if adherent, are separated by an incision and dissected free from the orbital contents. As the graft must adhere to the periosteum and anterior aspect of the orbital region, the dissection should be carried outward and low, well under the orbital margin. On the nasal side the dissection should be car-

ried well up to the orbital margin, above and nasally to the anterior crest of the lachrymal groove. In dividing the tissues above, dissection should be carried beyond the orbital rim. All cicatricial and granulation tissue should be removed, making sure the lid margins are not too thick.

With the bed for the graft prepared and all hemorrhage controlled, a small square of dental moulding compound is immersed in hot saline solution for thirty or forty seconds, then put into the cavity to take an impression. After it has hardened it is removed. A thin layer of epidermis (Thiersch graft) is secured. For this I prefer the arm or thigh, and enough should be procured to cover the dental moulding compound, leaving the raw surfaces outward. The impression compound with the graft around it is then gently placed in its bed, leaving the overlapping edges outward. The eyelids are closed and a pressure bandage applied and reinforced with adhesive tape. The dressing is changed on the seventh day and the wound dressed every third day thereafter. The dental moulding compound is removed on the eighteenth day, the graft remaining. This procedure is usually successful and furnishes an eye socket completely lined with epidermis.

Cicatricial Ectropion—Cicatricial ectropion is a condition frequently encountered. Ofttimes only one lid is involved, and that is usually the lower lid. The technique of the operation for this is as follows: An incision is made parallel to the distorted lid margin. All scar tissue is dissected away and hemorrhage controlled by pressure. After completing the primary dissection it is necessary to dissect up small portions of epithelium on the upper and lower lid margins. Approximation of the raw surfaces is maintained by mattress sutures. These sutures are passed through small pieces of rubber tubing, overlying the skin of both upper and lower lids near their margins, and tied so as to secure apposition of the raw surfaces. The result is that adhesions are formed between the two lids, thus maintaining the lower lid in position. A skin graft is taken, preferably from the upper lid where sufficient skin can easily be obtained to make an ideal inlay of true skin. No allowance need be made for contraction when this graft is used. A fusiform or semilunar design is convenient and is removed with a small scalpel or cataract knife, handling the graft as little as possible. All fragments are snipped off the graft before setting it in place, and fine horsehair or dermal sutures used to hold it in place. A pressure bandage is applied, first placing a small piece of rubber tissue impregnated with vaselin over the wound, and gauze fluffs, held in place with adhesive tape.

The dressing is taken off on the fifth day, the sutures removed and the graft cleansed with a weak solution of boric acid. The wound is dressed every other day for a week. About three weeks after the operation, light massage with sterile vaselin is advised. The adhesions between the lids are allowed to remain for two or three months, then cut with scissors.

Ciliary Line Restoration—Sometimes it becomes necessary to restore the ciliary line or part of it. The site of preference for securing this graft is the nasal end of the undersurface of the eyebrow. Or if the entire ciliary line has been lost, slit the eyebrow, using a longitudinal incision, and remove the desired amount. In suturing the graft in place it is advantageous to invert it so the hair on the graft will match as nearly as possible the cilia of the opposite lid. The same precautions are adhered to in this as were advocated in the cicatricial ectropion.

Rhinoplasty—Where grafting is essential for the formation of the bridge of a nose, a variety of material may be used and likewise prove unsuccessful with the exception of bone and cartilage. When bone is used in rhinoplasty it is usually procured from the rib, tibia, or ilium. Blair has employed a portion of the scapula in certain cases, and the third digit where there has been a total loss of the nose. The seventh, eighth and ninth rib and xyphoid cartilage offer selective sites in cartilage grafting. In all instances it is important to preserve as much as possible of the periosteum and perichondrium. Fixation of the graft and proper approximation of raw surfaces must be assured, and may be aided by the use of splints, sutures or pressure bandages.

Superficial scars of the nose should be repaired with skin from some part of the face. The upper eyelid makes an excellent match, and leaves no disfigurement following the removal.

The various deformities of the nose present a distinct problem to tax the ingenuity of the surgeon. Anatomical variations due to traumatism should be separated from changes resulting from constitutional diseases, such as syphilis. Diseased conditions should be looked for and rigid treatment carried out before undertaking operative procedure. The internal route is preferable as it leaves no scars. Assuming that the field of operation has been prepared, all types of defects can be prepared by using these incisions. An incision along the pyriform opening of the nose, beginning at the nasal bone, is carried downward and outward through the mucous membrane and chondro-osseous junction. The periosteum, subcutaneous tissue and skin are separated from the bone, liberating the entire area extending from the root of the nose over the nasal bones and superior maxillae. A second incision is made, beginning at the nasal bone and carried downward and forward to the tip of the nose. This incision is parallel to the bridge of the nose and is carried through the cartilage up to the perichondrium overlying the nasal bridge. A third incision is made from one nostril to the other, starting at the tip of the nose where the second incision terminated and carried backward along the lower border of the quadrilateral cartilage to the nasal crest of the superior maxillary bone and through the mucous membrane and cartilage. The fourth incision is made through the lower lateral cartilage at the point where the cartilage bends upon itself.

Cleft Palate—Let us now consider the cleft lip and palate. Of all the deformities that befall mankind these, to my mind, are about the worst. If allowed to remain uncorrected they jeopardize

the patient's life in a twofold manner, namely, physically and mentally. The life of an infant thus afflicted is endangered by its not being able to take nourishment properly. As the individual grows older this physical imperfection helps to retard the mental development, sometimes to the extent that the patient is classed as mentally deficient.

Regarding the etiologic factors responsible for these conditions, so far we have only been able to theorize. Therefore I shall confine my discussion to the surgical treatment, to which Brophy has contributed so much.

The cardinal principles involved in the operative procedure may be enumerated in the order of their importance. First, the establishment of the normal function of the tissues. Second, the correction of the associated deformities. Third, the proper postoperative results.

In order that these desired principles may be carried out the surgeons should know when to operate. This question has been frequently debated. I believe it has been generally agreed that when the maxillary bones are involved an aim to unite them should be made as soon as possible. This may be done by mechanically forcing the anterior portion of the maxillary process and premaxillary process into normal position. This procedure straightens up the nose, which is usually deflected to one side because of its attachment to the vomer. It brings the maxillary process into normal relation so that the eruption of the teeth will take place in the proper alignment, and also closes up the anterior portion of the palate, thereby allowing the child to take its nourishment normally.

If these cases can be seen in early infancy, before three and a half months, pressure with the thumb and fingers will force the parts together. They can then be held in place with a twenty-gauge wire which is passed through the maxillary processes on either side just anteriorly to the malar process. These wires are passed high up, emerging on the nasal surface of the palate and twisted together on the palatine surface. Approximation in older patients is hindered by the deposition of calcium salts in the tissues. If this closure is not secured before the bones have become ossified the procedure becomes more difficult. And if the teeth have erupted it changes the whole picture and defeats our aim to restore the tissue to normal function.

In the first procedure we reduce the cleft from a cleft involving the hard and soft palate to a cleft of the soft palate involving only a portion of the hard palate. Those presenting a double cleft palate and lip with a protruding premaxillary process are the most difficult to handle. Let me here mention a vicious procedure that is practiced by some operators, namely, that of cutting off the premaxillary process in order the more readily to effect a closure of the associated cleft lip. They sacrifice the incisor teeth as they develop in this process. This results not only in the loss of the incisor teeth, but also in a deformity of the upper jaw because of the sagging or depression of the anterior of the maxilla. The premaxillary process should be preserved and forced into normal position. This is accomplished by cutting the vomer, which permits the premaxillary process to be forced into its normal position where it is retained by means of silver wire.

In cases where the osseous portions have been primarily approximated, or where the soft palate alone is involved with possibly a small portion of the hard palate, I am inclined to utilize solely the mucoperiosteal tissue to form the flaps to close the cleft palate. It is therefore desirable that this tissue be allowed to develop until just before the time the child begins to form its first words, which is usually around the twentieth month.

The technique which I shall briefly describe for closing wide clefts of the soft palate involving a portion of the hard palate is practiced by Lyons of Ann Arbor, and may be termed a modified Lane.

The operator begins by dissecting up the mucoperiosteum and elevating it from the hard palate, commencing at the outer margin of the cleft unattached to the vomer. The aponeurosis of the soft palate is freed from the palatal process of the maxilla on this side only, which forms a single flap running from the anterior part of the cleft to, and including, the palatopharyngeus muscle. An inverted flap is fashioned on the opposite side of the hard palate by making a longitudinal incision, beginning at the junction of the hard and soft palates one millimeter to the lingual of the gingivolingual margin of the third molar and running forward to a point five millimeters anteriorly to the anterior portion of the cleft, keeping one millimeter to the lingual of the gingivolingual margin of the teeth. A curved periosteotome is used for this purpose. The mucoperiosteal flap is raised up from the bone and inserted under the margin of the flap from the opposite side and sutured with a mattress suture. This acts as a stay-suture. Coaptation of the two flaps is made with interrupted sutures, dermal being used, as the tissues react well to them. Relaxation of the soft palate is made by a horizontal incision two centimeters in length posteriorly to the tuberosity. This incision is packed with iodoform gauze and allowed to remain for four or five days.

The postoperative care is important. The patient should be kept in bed for two weeks and not allowed to talk. A recumbent position prevents the mucus that forms on the nasal surface of the palate from remaining and aids in the drainage back into the throat. A spray of normal saline is used in the nasal and oral passages as a cleansing solution. The sutures are removed at the end of ten days. The patient is allowed liquids only at first, increased to a soft diet during the period of convalescence.

GENERAL CONSIDERATIONS

The gravity of these operations must ever be borne in mind. A thorough search for status lymphaticus should always be made and proper treatment instigated before any operative procedure is undertaken. No attempt at surgical repair of the defects should be made while the weight curve is on the decline. The surgeon should be

watchful in the postoperative as well as the preoperative care.

As a preliminary to any plastic operation, all infections must be eliminated and sequestra, resulting from osteomyelitis, cleared up. Constitutional diseases, such as syphilis and tuberculosis, should be dealt with by the use of proper therapy. The ability to use instruments when possible is advantageous, as digital manipulation of the grafts leads to necrosis and favors secondary infection. Careful approximation of raw surfaces, with as little tension as possible, is important. Use fine suture material. Horsehair for cutaneous sutures is preferable. Hemorrhage should be controlled by pressure when possible, thus avoiding the necessity of burying sutures and the chances of infection.

The acid test of a plastic surgeon is his ability to form a flap in large defects, to transfer it from a distant part of the body and successfully place it in its new position. The surgeon should not be tempted to try too much at one sitting. It is better to proceed step by step and observe how nature follows the indicated way.

870 Market Street.

DISCUSSION

GEORGE WARREN PIERCE, M. D. (490 Post Street, San Francisco)—This paper has quite thoroughly covered an extensive field. The multiplicity of details of technique so essential to success in plastic surgery has of necessity been limited, but has been sufficiently described to give opportunity for that friendly difference of opinion as to procedure, which difference makes for ultimate progress in this new specialty.

We are learning daily new uses for Gillies' tubed pedicle flap. The number of step-ups of the flap seems to have no limit, and the skin and fat at the final step have retained their normal characteristics. In two cases I have transferred large flaps from the abdomen to the foot, stepping down to the thigh, then to the opposite calf, then to the foot. Where an abundant fat pad is needed this is the only method available. I have not tried Doctor de River's jump tubed flap method, as no difficulty has been found in my experience in tubed flaps as long as fourteen inches. It may have its uses, but I cannot see how the amount of blood circulating through one-fourth-inch strips of skin can have very much effect on the circulation of the pedicle. It has the added disadvantage of opening additional areas for infection, one of the greatest foes of the tubed pedicle in its first stage.

In reconstruction of the auricle, Doctor de River has not mentioned the use of cartilage as a support to the newly formed organ. Most of the reconstructed ears I have seen have had the distressing characteristic of shrinking after completion. I feel that it is more important to have two ears of the same relative size than to reproduce all the finer intricacies of structure of the auricle. With this in mind I now use a rib cartilage implant under the scalp, in a direction upward and slightly backward from the external auditory meatus. A small diameter tubed pedicle is constructed on the neck. Then an incision is made in the scalp in the shape of the proposed ear, this flap is freed and an epithelial inlay placed behind the flap. Ten days later, when the wax is removed, the flap will stand out at the angle to the head occupied by the normal ear. This flap is finally surmounted by the tubed pedicle to give the effect of the rim. This ear will not shrink and at a few paces distance has the appearance of a normal ear. Finer details of contour of the helix can be obtained by the implantation of smaller pieces of cartilage in the scalp flap.

As to the cleft palate I prefer the Brophy type of operation throughout to any other, as it most closely follows the anatomical and physiological requirements of this deformity. I do not like the Lane type of operation because it is destructive to the palatal musculature, it causes irreparable loss of tissue if unsuccessful, and it jeopardizes the palatine artery, the principal blood supply to any palatal flap, on the inverted flap side.

THOUGHT, IDEAS AND FUNCTIONAL SYMPTOMATOLOGY—AN ATTEMPT TO DISCOVER AN ORGANIC BASIS THEREFORE*

By ROSS MOORE, M. D.
Los Angeles

DISCUSSION *by Nathaniel H. Brush, M.D., Santa Barbara; Eva Charlotte Reid, M.D., San Francisco.*

THOUGHT is a real thing. It therefore must come from somewhere. It does not develop outside the human body and proceed into it. That is clear.

Thought cannot be purely a nerve cell secretion, an exudate from the central nervous system as bile is from the liver. But even if it does exude in some such psychologically fantastic manner, an ultimate origin for the materials of thought and intellection must nevertheless be sought until found if one is really an earnest seeker after the whole biologic truth.

THOUGHTS AND IDEAS

Thoughts and ideas concerning the outer world do not originate *de novo* inside us. Evidence concerning our external surroundings must reach us through our sense organs, before we can begin to think about them or include them in our circle of intellectual activities. In an exactly parallel manner, ideas concerning the inner world cannot be elaborated by the human intellect except as evidence is brought to it from all parts of the human body. At birth the organs of human intellection are so rudimentary that they only register and record somatic evidence without being able to understand what such evidence means. Thus a very young babe will cry if a pin pricks it, but is not able either to analyze the unpleasant stimulus or to locate its origin. The baby cannot think about pain, but it can react to pain stimuli.

Thinking is a definite function largely residing in the human brain and spinal cord. The neural activity which results in thought is secondary in nature, not primary. The brain and spinal cord correlate stimuli received from the outside world with those coming from the world within the human organism. The only materials of thought which the brain and spinal cord actually originate are stimuli of the same order as those which originate in all other body cells. It is reasonable to think of memory as a special product of nerve tissue, parallel in its essential biological attributes to the products of any other definitely differentiated body tissue. Thus memory might be con-

* Read before the Neuropsychiatry Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

sidered as a specialized product of nerve tissue just as suprarenalin is of the suprarenal gland.

THE SENSORIUM

For the sake of brevity, the central area of stimuli correlation and thought production will hereafter be referred to as the sensorium.

The stream of human consciousness consists of multitudinous stimuli coming into the sensorium from outside the body and other multitudes coming to the same place from inside the body. In the sensorium they come into relationship with each other and with memory pictures. The whole mobile mass is constantly analyzing itself and synthetizing itself, turning impressions into ideas, ideas into thoughts, thoughts into conclusions, and conclusions into actions.

Human voluntary activity is the visible, tangible result of human thought.

Human thought, on the other hand, is the final product of the correlation, the modification and the synthetization of primary stimuli coming to the sensorium from both inside and outside the human body.

External stimuli are easily traced direct to their origins.

Internal stimuli may also be traced to their origins by philosophical and physiological deduction. They come from every part and portion of the body and are transmitted to the sensorium by the afferent nerves. Their ultimate origin is the ultimate structure of every organ and department of the body.

Thus it becomes evident that knowledge of ourselves does not result from some mystical and unexplained function of the human brain and nerves. It comes direct from the body itself. It is an inner consciousness which doubtless is more exact than our unconscious knowledge of the external world.

For the purposes of this argument it is only necessary to trace internal impressions to their ultimate origin.

EXTERNAL IMPRESSIONS NEED NOT BE CONSIDERED

All cells of the human body have a common cellular ancestor—the primary mother cell or ovum. They inherit like potentialities, albeit some are sometimes of very rudimentary type. By reason of their long and close association together and their hereditary cooperative tendencies, every body cell is sensitive to the state of biochemical, molecular and biophysical well-being of every other cell with which it is connected either by contact or through the nervous system.

Individual cells are thus sensitive to each other, while great cell masses like the liver are constantly sending to the sensorium very definite and strong evidence of their mass condition. The general sense of well-being or ill-being, which is always present in the human personality, is merely the summation of these somatic evidences and the moulding of them into a more or less vague conscious impression.

HUMAN INTELLECTION

The argument thus far developed may be stated concretely as follows: Human intellection is a function of the human sensorium. Its primary or ultimate origin is tripartite: (1) external impressions; (2) internal impressions; and (3) memory impressions.

To continue, internal impressions constantly arrive from every part of the body, bringing to the sensorium a stream of evidence relating to bodily tone and condition. This evidence is transformed in and by the sensorium into an uninterrupted stream of somatic knowledge—a sense of the personal ego.

THE PERSONAL EGO

Bodily pain furnishes a very simple and self-explanatory illustration of the transformation of internal impressions into a sense of the personal ego. Take the pain of pleurisy, for instance. It is due to frictional irritation of inflamed pleura. Infection brings about this inflammation. Irritation develops when respiratory movement occurs where inflammation is located. Next, irritation stimuli are transmitted to the sensorium and are there transformed into evidences of pain. Finally a pain idea rises into the acute consciousness.

A less evident sequence is one discovered centuries ago and named melancholia—black bile. Possibly some future biochemist will succeed in unraveling the ultimate molecular constitution of normal and pathological bile. Then possibly the diagnosis of melancholia will be transferred from the sick room to the laboratory. The persistence of the word "melancholia" as the characteristic name by which a certain type of depression is identified is a sort of historical evidence tending to suggest that wrong liver function and mental depression are related to each other as cause and effect.

Other and less tangible sequences are easily constructed on the basis of the theory that consciousness and intellectual activity have their primary nidus of origin in the various differentiated tissues of the human body.

For example, a virgin develops the belief that she is pregnant. In such a case either one of two sequences may be present.

The first sequence is initiated by the development of a fibroid tumor inside the virginal uterus. A sense of uterine fullness results, which is at once transmitted to the sensorium. It rises into consciousness as a vague but a very real, new quality of sensation in heretofore unused sex parts. This new sensation stirs up three unusual types of memories. First, memories concerning the location of unborn babies in the mother's body (these are the result of early training and youthful observation); second, biological memories which take the form of imperious longings for motherhood; third, distorted memories arising from lack of proper information regarding how women become pregnant. Emotional confusion results and finally a pathological trend of thought is developed which, once started, runs rapidly to its inevitable conclusion—a false idea, a delusion.

It seems reasonably correct to conclude that this particular virginal delusion of being pregnant has its definite origin in a sense of uterine fullness due to the fibroid growth. Those stimuli which would have been normal from a pregnant uterus

became pathological when coming from a fibroid, and gave rise to a delusion—a false idea, when mixed with prudish sex ignorance and pseudo-moral religious repressions.

The second sequence has its origin in the fact that the virgin has a congenitally substandard ovary which never produces, and probably never has produced, a properly balanced internal secretion. She grew up to and through puberty with an incomplete or paranormal attitude toward life. Because of this faulty genetic *sine qua non,* this permanent endocrine unbalance, she approached the marriageable years greatly handicapped by faulty emotional and physical makeup. Repeated flirtatious association with the opposite sex created a pelvic congestion. Gradually a more or less chronic pelvic or uterine congestion was developed. When evidence of this uterine congestion began to arrive in the sensorium it was at once seized upon by the abnormal sex ideas already in existence, a train of thought was started which quickly developed into ideas of self-accusation and of fear. The sufferer's resistance to her pathological emotions was gradually lowered and the whole mental and emotional situation finally developed into a psychotic state or a psychosis, the central feature of which was a delusion of virginal pregnancy.

Here again it is possible and reasonable to conclude that the false idea of pregnancy in a woman who was undeniably a virgin had its primary origin in a bit of actual organic pathology—the chronic pelvic congestion originating in continued sex stimulation without satisfaction.

Examples equal in number to the total of all types of somatic delusions, hallucinations, obsessions and fancies, might be cited if time permitted and wisdom directed. They are not necessary. Sensory evidences coming from the organs and tissues of the body are the ultimate source of human mental activity. This theory, if accepted, will provide a means by which functional symptomatology may be analyzed and understood, and finally be traced to its ultimate origin.

SUMMARY

A final restatement of the theory follows: Human intellectual *function* originates from the inherent ability of body cells to communicate a sense of their own physiological condition to each other. Human intellectual *activity* results from the concentration of all these cellular communications in the sensorium where they are brought into contact with memories, both racial and acquired.

Healthy human thinking ability is the result of stimuli arising from normally functioning body cells, plus the moulding and elaborating activities of a normal sensorium, in the presence of a well-balanced store of racial and acquired memories.

Pathological human thinking develops when one or more important cell masses or organs in the body send unnatural stimuli to the sensorium. The quality of the resulting mental symptomatology depends in large measure on the type of physiological memories already stored up in the sensorium.

520 West Seventh Street.

DISCUSSION

Nathaniel H. Brush, M. D. (103 East Micheltorena Street, Santa Barbara)—When Doctor Moore presented this paper before the Section of Neuropsychiatry at the fifty-sixth session of the California Medical Association he expressed the hope that the subject-matter of the paper would be productive of some general and special discussion dealing with the topics brought out.

Doctor Moore states that "thoughts and ideas concerning the outside world do not originate *de novo* inside us." But has not Doctor Moore here failed to take into account a great many of our thoughts and ideas which must originate within us? Analysis of many of our ideas concerning the outside world—broadly grouped as our instincts—will show that these thoughts can and do originate within us. The baby, to quote Doctor Moore's illustration, cannot think about pain or locate its origin. But the same baby will have little difficulty in locating and utilizing its mother's breast as a source of nourishment.

One gathers from this paper that Doctor Moore has been balked in his efforts to explain on a purely functional basis the symptoms presented by some of his patients, and has turned to an organic explanation. All well and good, but let the functional symptoms fall into their place, and let the organic fall into theirs. In the case of the virgin with delusions of pregnancy it is not entirely outside the realms of possibility that the delusions themselves expressed on the part of the virgin a wish fulfillment.

Doctor Moore also states that "pathological human thinking develops when one or more important cell masses or organs in the body send unnatural stimuli to the sensorium." If such is the case what organs or cell masses are we going to consider at fault when a schizophrenic tells us that his mind is being controlled by radio waves sent to him from a distance.

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Eva Charlotte Reid, M. D. (135 Stockton Street, San Francisco)—When Doctor Moore raises the question of the seat of intellection and ideation and the processes involved in their production he propounds a problem that has so far baffled all physiologists, psychologists, and neurologists. In the normal individual the sensorium is stimulated by sensations from the environment conveyed by vision, audition and olfactory, gustatory and cutaneous sensations, as well as by sensations from all the organs and parts of the body. In disease any or all of these may become pathological. In certain psychoses the individual may become completely indifferent to external stimuli and in the psychoneurosis one or more of these stimuli may be cut off or become pathological by an apparently purely psychological process.

In regard to the genesis of the psychoneurosis we know that stimulation from the environment produces through the autonomic nervous system definite organic changes which are independent of the will. Muscles stiffen in anger, retract and tremble in fear. Shame and embarrassment cause blushing. The sight and smell of food stimulates salivary and gastric secretion. Fear, anger and joy influence digestion, respiration and circulation. The researches of Crile, Sherrington, and others have shown that the emotions have a definite influence on the quality and quantity of the secretions of the ductless glands. It is therefore reasonable to suppose that an emotion existing over a long period of time may produce an abnormal condition of an organ or group of organs. The autonomic nervous system controls not only the ductless glands, but the organs which perform the functions of assimilation, conservation, destruction, and expenditure of energy and elimination of waste products. The theory of the psychoanalyst is that a functional derangement is caused by a repressed desire, fear or

anxiety, and even after the desire has been forgotten and the fear and anxiety dissipated, the disability is continued by the action of the autonomic system. Recent investigations have shown that many cases which had been diagnosed as suffering from globus hystericus have a spasmodic nervous contraction of the esophagus which interferes with deglutition.

In schizophrenia, or dementia precox, the theory of organ inferiority appears to fit the case as well as any other. The individual, having failed to develop a normal personality and being unable to meet the demands of adult life, creates a world of his own with hallucinatory and delusional experiences representing in symbolic form his wish fulfillments. As time goes on the dissociation becomes greater until he loses contact with his environment entirely as seen in the catatonic stupor. He regresses to a lower and easier level of existence, in some cases to the infantile state.

The depressions occurring in the involutional period present such a uniform picture of faulty metabolism and incomplete elimination one cannot doubt that there is an organic basis for the depressive somatic delusions which exist. Much research will have to be done before anything definite can be said on the subject.

In the psychoses associated with organic brain disease such as general paralysis of the insane, and arteriosclerotic conditions, the hallucinations and delusions are the result of degeneration of brain tissue and their character undoubtedly depends upon the location of the area involved.

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Doctor Moore (closing)—This has been a very interesting paper to write. It was a difficult paper to write—difficult in that the idea to be expressed lies far back of our usual groove of medical thought.

Evidently I did not succeed very well in putting my idea into words, because the discussions of the paper, both those above quoted and those not reported, quite fail to expound the real matter. For example, Doctor Brush indicates that I "fail to take into account . . . our instincts."

On the contrary, one phase of my effort is directed toward finding the ultimate reason for our instincts. Far from not taking them into account, I rather accept them as things the origins of which are to be studied. According to the theory which this paper tries to make manifest, the instincts of all living things are the inherited results of ancestral experiences. These inherited results are real things and therefore must reside somewhere—in the brain, in the brain plus this or that organ or in the ultimate cellular makeup of brain, organ or complete soma. Possibly instincts are so complex that their ultimate seat is to be found in the total personality of the individual.

It seems easy to me to suppose that thought in all its phases is cellular in origin, and that the cells of origin of a particular type or quality of thought are the cells of the body which are particularly involved in the content of that thought.

Abortion Legalized—Russia, unafraid of experiment in government, has formed a commission for considering petitions of women who, for any cause, desire abortion. Eighty-three per centum of these petitions have received favorable action. In three years 55,320 authorized abortions have been done. In this great number there was no fatality. The operations are all free and are done in government hospitals. Within the same period the authorities of Russia learned of 66,786 abortions done by bunglers with 3000 deaths.

Not satisfied with the results of its trial of free abortions, Russia is now more actively teaching birth control and is experimenting with new methods of prevention. In all European countries there is increasing activity in teaching birth control. The United States is alone in forbidding the use of the mail to writings favorable to contraceptive methods. We, in a land of the free, practice the principle that the government must decide what the people may be permitted to know.—*Colorado Medicine.*

THE CLINICAL SIGNIFICANCE OF PULPLESS TEETH *

By J. Mark Lacey, M. D.
AND
Clayton R. Johnson, M. D.
Los Angeles

Discussion *by E. F. Tholen, M. D., Los Angeles; Andrew B. Wessels, M. D., San Diego; Lloyd Bryan, M. D., San Francisco.*

IT is assumed that there is such a factor in the production of physical disability as focal infection, and that the teeth must always be suspected as a possible source. The object of this paper is to report from our personal clinical experience, the conditions under which we believe teeth should be condemned, and the results which were obtained by the procedures adopted.

BACTERIOLOGIC EVIDENCE OF INFECTION

In 1924 Dr. Russell Haden [1] of the University of Kansas Medical School reported an extensive study concerning the bacteriologic findings of pulpless teeth as compared with evidence of infection as commonly interpreted on the radiograph. His conclusions were summarized as follows:

"The incidence of infection is almost as high in the radiographic negative group as in the radiographic positive group. There is a very sharp limitation to the translation of radiographic evidence of infection into terms of bacteria.

"In many cases the radiographic negative tooth is a far greater source of systemic infection than the radiographic positive tooth, since in the former there may be little resistance to infection."

CLINICAL RECOGNITION OF INFECTED TEETH

Previous to the publication of these conclusions only the radiographic positive teeth were considered by us as active foci of infection. Such evidence, as commonly interpreted, is characterized either by absorption of, or by increased density of the periapical tissue. Pulpless teeth which did not show evidence of periapical changes on the radiograph were not sacrificed.

In our own practice the results of this procedure were only partially satisfactory. We could come to no definite conclusion clinically as to what part pulpless teeth actually did play in the production of physical disability. During the past two years our procedure has been to suspect all pulpless teeth regardless of the periapical changes on the radiograph, as well as all teeth showing extensive marginal absorption of the alveolar process.

In carrying out this procedure it was necessary to secure the absolute cooperation of a competent dentist who held similar views. Radiographs were indispensable. The majority of pulpless teeth had root canal fillings, which gave positive shadows on the radiographs. Marginal absorption was also readily demonstrated. Teeth with large fillings or crowns were considered as suspicious and were referred to the dentist for vitality tests. The gin-

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* Read before the Innominate Society of Los Angeles, March 9, 1927.

gival margins were also closely examined for evidence of infection.

COMMENTS ON FIFTY SELECTED CASES

From our records we have selected fifty cases with complete records. All of these patients have been studied in detail, and they have been selected because of the presence of pulpless teeth, pyorrhea, or both, were the only positive physical signs or evidence of an exciting factor in the production of the disability. For presentation, these cases have been classified into the following groups, according to their cardinal symptoms:

1. *Neuralgia*—Usually characterized by recurring headaches, pain in the back of the head and neck, shifting pains in the muscles and joints, a generalized feeling of ill health, and, in a number of cases, a genuine sciatica.

Of this type there were twelve cases, eleven of which were completely relieved of all symptoms, and one definitely improved.

Typical Case—Male, age 31. Two months previous to consultation developed numbness, accompanied by pain and tenderness over the outer and posterior part of the left thigh. These symptoms subsided after about four weeks and recurred again about two weeks later. There was considerable pain in the back of the head and neck, he was very nervous, had lost considerable weight, and complained of a general feeling of ill health. The general physical and laboratory examinations were negative. Radiographic examination of the teeth revealed three that were pulpless.

Treatment: The three pulpless teeth were extracted. Symptoms were exaggerated for a time. Following this there was a gradual improvement with relief from all distressing symptoms, and there had been no recurrence nine months later.

2. *Neurasthenia*—Usually characterized by a state of nervous and mental exhaustion, headache, insomnia, loss of appetite and weight, indigestion, and at times, circulatory disturbance.

In this group there were fourteen cases, eight of which were relieved of all symptoms, and six definitely improved.

Typical Case—Female, age 29. Complained of nervousness, inability to eat, weakness, insomnia, frequent colds, constipation and abdominal distress.

Physical examination: Weight, 100 pounds, or about twenty pounds below average; pulse, 118; blood pressure, 100; teeth in poor condition. The remainder of the physical and laboratory examination was negative. Fluoroscopic examination of the gastro-intestinal tract showed a high degree of gastro-enteroptosis combined with a general sluggishness of motility. Radiographic examination of the teeth revealed four that were pulpless.

Treatment: The four pulpless teeth were extracted and the patient was put to bed on a high caloric diet. Within six weeks she had gained twelve pounds in weight and was completely relieved of all distressing symptoms.

3. *Gastro-Intestinal Distress*—Usually characterized by heartburn, gas on the stomach and bowels, distress without direct relation to type of food or time of taking food, and rarely with demonstrable localized abdominal tenderness. The symptoms were so distressing in all of these cases as to warrant a complete x-ray study of the gastro-intestinal tract.

In this group there were ten cases, all completely relieved.

Typical Case—Male, age 25. Had complained of stomach trouble for six months, characterized by distention of the abdomen with gas, accompanied by acute distress. The distress came on at any time of the day or night, regardless of meals or type of food. He had never noticed any soreness in the abdomen. Bowels were somewhat costive. The remainder of the physical and laboratory examination and the gastro-intestinal x-ray examinations were negative. Radiographic examination of the teeth showed the lower left second molar pulpless.

Treatment: The pulpless tooth was extracted, and dietary management of the constipation was advised. One week later the distressing symptoms had all disappeared and have not recurred six months later.

4. *Hypertension Accompanied by Headaches, Dizziness, Weakness, and Variable Gastro-Intestinal Symptoms*—Of this type there were six cases, all definitely improved.

Typical Case—Female, age 55. Complained of headaches, dimness of vision, weakness, palpitation, and gastro-intestinal distress.

Physical examination: Blood pressure, 275-140. Otherwise negative. Laboratory examination negative. Fluoroscopic examination of the heart with orthodiagraphic tracing showed a hypertension silhouette with all diameters of the heart increased.

Radiographic examination of the teeth showed three pulpless and advanced generalized absorption of the alveolar margins.

Treatment: All of the teeth were removed. The patient was placed on a low protein diet and potassium iodid.

Within three days the blood pressure had dropped to 210-130, and had remained so several months later. The distressing symptoms all promptly disappeared.

5. *Low Back Pain*—Three cases all completely relieved.

Typical Case—Male, age 60. Complained of lumbar pain for about two months. There was no history of previous injury. The pain was greatly exaggerated on arising from a sitting position. No other complaint.

The general physical examination and laboratory examination was negative excepting for advanced pyorrhea about all of the teeth.

Treatment: All the teeth were extracted, which resulted in complete recovery.

Besides the above cases there were two with a very definite toxic erythema and two with acute exacerbation of a chronic arthritis. The toxic erythema with the accompanying symptoms was entirely relieved, also acute symptoms of the arthritis.

CONCLUSIONS

1. Radiographic examination of all the teeth and edentulous areas, combined with the clinical examination by a competent cooperative dentist, is essential in searching out foci of infection about the teeth.

2. In the interpretation of radiographic evidence of infection all pulpless teeth and all teeth showing extensive absorption of the alveolar margins must be considered as active sources of infection.

3. Judging from clinical results obtained in our own cases, it is our contention that the removal of all pulpless teeth and of all teeth showing exten-

sive infection of the gingiva and alveolar margins, is entirely warranted, as prophylactic, as palliative and as curative measures.

1052 West Sixth Street.

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DISCUSSION

E. F. Tholen, M. D. (1136 West Sixth Street, Los Angeles)—Doctors Lacey and Johnson have shown a comprehension of the pathology of the mouth not often fully understood by the general practitioner of medicine. The study of their paper will prove helpful to both the physician and dentist. I agree in the main with all that has been said in the paper, but my results from the removal of foci of infection have not always been as successful as I had hoped they would be. There are failures following the extraction of teeth, especially in such conditions as neuralgia, arterial hypertension, chronic nephritis, neurasthenia, and diabetes. I cannot agree with the conclusion that we are warranted in removing pulpless teeth as a prophylactic measure. I believe that pulpless teeth, the roots of which show a live peridental membrane about the apex and a root canal that can be filled, should be treated, filled and retained, providing the patient is not suffering from any systemic disease that could be influenced by a focal infection.

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Andrew B. Wessels, M. D. (1305 Medico-Dental Building, San Diego)—The mouth and jaws have the natural protection of a very rich blood supply. It is logical that an infection which could become established in the teeth would have considerable invasive power and readily metastasize; thus establishing a secondary infection in a field of lesser vascularity and greater susceptibility, according to the inherent susceptibility or immunity of the patient. The attention of the profession has frequently been called by men devoting their time to research in this field that the radiogram cannot indicate the amount of virulence of the infection nor the degree of susceptibility to the infection; and that some devitalized teeth showing little or no periapical involvement are frequently the greatest offenders. If Doctors Lacey and Johnson are mistaken in their conclusions that all pulpless teeth and all teeth showing extensive infection of the gingivae and alveolar margins should be removed, it is a mistake favoring the side of the physical factor of safety and may offset the occasional unnecessary loss of a useful unit of mastication which loss may be avoided by investigating other possible foci. However, I do not agree with Doctors Lacey and Johnson in such a conclusion, and I do know that many cases showing extensive marginal destruction can be successfully operated unless there is an involvement of the bone between the bifurcations of the multirooted teeth. I do not believe that in the absence of systemic involvement that all pulpless teeth should be removed as a prophylactic measure. However, it is well to bear in mind that while dental infection may have been the primary etiological focus, an established secondary infection may not clear up even though the primary focus is removed. I believe that intelligent treatment must come through careful investigation of each individual case and that the cooperation of a competent dentist is invaluable.

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Lloyd Bryan, M. D. (135 Stockton Street, San Francisco)—The authors' assumption that the incidence of infection in pulpless teeth is almost as high in the radiographic negative group as in the radiographic positive group is not confirmed; but the clinical experience of our best dental surgeons and bacteriological confirmation certainly cannot be accepted without question on account of the almost impossible task, at least under present conditions, of obtaining uncontaminated culture from an extracted tooth.

The principal if not only function of the pulp is to form dentine. Is it fair to assume that a tooth with this dentine forming substance removed and replaced under aseptic condition is dead and infected when the vital peridental membrane is intact? Most dental surgeons do not hesitate to remove a pulp when it has passed its useful period and the restoration of a satisfactory denture requires it. In the hands of competent dentists many of the frankly infected teeth can be restored to normal clinical and radiological appearance. The teeth have a double formative and nutrient supply in the pulp and peridental membrane, and this latter membrane continues its supporting and protective function after the pulp has been removed. Many authorities believe that pyorrhea is the result rather than the cause of a general systemic condition.

The wholesale removal of pulpless teeth and the substitution many times of inefficient uncomfortable appliances may cause havoc with the nervous system or general body health. There are many healthy patients with extremely bad mouth hygiene and infected teeth and many a case of arthritis with perfectly healthy teeth.

In practically all the authors' examples the patients were subjected to other recognized forms of treatment besides removing the pulpless teeth. One wonders if rest and iodids would not have alone reduced the blood pressure in one example; and if rest, diet and relief of constipation in another might not have relieved the so-called "neurasthenic." In face of a general body disturbance the removal of pulpless teeth that are clinically and radiologically normal may at times be of benefit, but it also has potentialities of a great deal of harm. Let us be sure that there is not some other hidden source of infection.

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Authors (closing)—We have presented our conclusions based upon our clinical experience. Without further discussion we refer you to the observations and conclusions recently set forth by the department of dentistry of the Mayo Clinic under the direction of Doctor Gardner. Their evidence is far more convincing than we, with our limited facilities, could ever hope to demonstrate.

DIETETIC CONSIDERATIONS IN THE TREATMENT OF OBESITY*

By Fred S. Modern, M. D.
and
Grace E. Johnson, A. B.
Arrowhead Springs

Discussion *by Ernest S. du Bray, M. D., San Francisco; Esther B. Clark, M. D., Palo Alto; William M. Happ, M. D., Los Angeles.*

THE following considerations are based partly on a study of the literature of the subject, partly on experimental and clinical experience. The leading idea of the relative etiological importance of mineral and water metabolism in obesity has been widely discussed, and well summarized in the recent edition of Eugene DuBois' "Basal Metabolism in Health and Disease."[1] The practical application of these facts was on the point of being recognized when I took up the consideration of the matter. I will restrict myself as much as possible in the following discussion to fundamentals in the treatment of obesity, since the sub-

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* From the Arrowhead Springs Metabolic Clinic, Arrowhead Springs.

* Read before the Los Angeles County Medical Society, October 20, 1927.

ject is too large to permit even a sketchy presentation of the principles involved, especially in regard to the pathological varieties of obesity.

The problem of obesity is strictly a nutritional problem, regardless of the etiology.[2] Whether it is due to overfeeding or to certain disturbances of metabolism, the basic fact undoubtedly is that the intake exceeds the utilized amount of food. This conception would reduce the treatment of obesity to a simple dietetic procedure, that of undernutrition. But all of those who have had experience in the treatment of obesity recall certain cases in which, in spite of the utmost caloric restriction compatible with the patient's well-being, the scales showed disappointing results: not only did the patient not lose weight, but very often actually showed a certain amount of gain.

To the patient as well as to the physician the actual result, that is the reduction of weight, is the only important feature of the treatment. We know well that the caloric intake, say of 800 calories, is insufficient to meet even the basal requirement, and undoubtedly patients on 800 calories have burned up some of their fat deposits. Consequently this added weight must be due to other factors than newly built body tissue.

To elucidate the origin of this gain I performed a number of water-balance tests in obese patients to ascertain whether this gain in weight might be attributable to a possible water retention. The method adopted was the ordinary water test as prescribed by Volhart for functional renal tests. The patient drinks at 7 a. m., 1500 cc. of water: he does not receive any fluid within the next twenty-four hours. For breakfast he receives 45 grams of protein and 4 grams of salt at 7:30 a. m., and is served a dry luncheon and dry dinner, protein and salt-free. The urine is collected at hourly intervals beginning at 8 a. m. for the first four hours; subsequently at two-hourly intervals until 8 p. m., and the night urine from 8 p. m. until 7 a. m. is collected in bulk. The patients were kept under basal conditions throughout the test period. They were confined to bed and sufficient covers were permitted to keep the patient comfortably warm but not enough to produce perspiration. Tests were discarded if a patient perspired slightly over one hour, or perspired profusely at any time. Under these conditions patients with a normal water balance eliminate the entire water, in excess of what has been taken at the start of the test, within four hours, and excrete all the salt that they received within twenty-four hours.

Volhart Test

Protein 45 grams; NaCl. 4 grams; H_2O 1500 cc.

January 22, 1924.

Time	Vol.	Sp. Gr.	% NaCl.	Total NaCl.	T. N.
7– 8	106	1005	0.094	0.10	0.37
8– 9	457	1002	0.080	0.22	0.74
9–10	589	1001	0.073	0.43	0.72
10–11	380	1002	0.15	0.57	0.73
11–12	185	1006	0.25	0.44	0.65
12– 2	145	1012	0.25	0.36	0.78
2– 4	88	1020	0.83	0.73	0.64
4– 6	43	1036	0.96	0.42	0.86
6– 8	58	1032	0.96	0.57	1.13
8– 7	207	1029	0.46	0.98	3.52
Total	2257			4.82	10.34

The results of the tests were uniform in all obese cases. Instead of an output in excess of 1500 cc. in the first four hours they had a water retention of from 30 to 60 per cent: some of the patients showed a positive water balance of from 10 to 30 per cent within the next twenty-four hours.

I am inserting a typical test chart:

Volhart Test

Protein 45 grams; NaCl. 4 grams; H_2O 1500 cc.

Name—No. 1745 March 21, 1924.

Time	Vol.	Sp. Gr.	% NaCl.	Total NaCl.	T. N.	Acid	Urea
7– 8	95	1002	.086	.08	.47	12.9	.66
8– 9	475	1003	.024	.13	.60	14.2	1.30
9–10	332	1004	.029	.10	.47	8.0	.92
10–11	67	1020	.330	.22	.55	5.3	.92
11–12	28	1029	.721	.20	.41	2.5	.42
12– 2	42	1022	.746	.32	.72	28.0	1.05
2– 4	17	1034	.601	.10	.33	7.1	.47
4– 6	65	1032	.622	.41	1.16	40.25	1.12
6– 8	16	1038	.552	.09	.37	15.3	.35
8– 7	170	1030	.305	.52	3.38	64.0	2.72
Total	1307			2.17	8.44	198.4	9.93

These results have been secured after thorough examination of the kidneys, occult edema being excluded. This water retention is well known—even to makers of anti-obesity patent medicines. One of the large pharmaceutical firms includes the following instructions in the pamphlet accompanying its "Anti-Obesity Tablets": "While the patient is under treatment, he must abstain from starches and fats, and should drink very little water."

This water retention can be met in two ways: either by restriction of the water intake as advocated by the above-mentioned patent medicine makers, or by modifying the diet so as to reduce the water avidity of the tissues to a minimum.

In this connection I wish to mention that German authors have used, with more or less success in obesity, the new, powerful diuretic, "Novasurol," a mercury derivative for dehydration of the patient.[3] The same means can be attained in a more agreeable way by the electric light cabinet or similar sweating procedures.

A water restriction seems undesirable, since the chemical examination of the blood and urine of patients on the low calorie diets show invariably the presence of a certain amount of acetone, simply due to a carbohydrate privation acidosis. I had occasion to examine the CO_2 combining power of the plasma in a number of these cases, and found in one instance as low a value as thirty-three volume per cent. The usual value in these cases is subnormal. To meet this starvation acidosis by soda bicarbonate is unfeasible, because it tends to create edema, in other words promotes water retention.

Patients on an unselected low diet are usually feeling weak, tired and exhausted. This is due to their low diet as well as their acidosis. Their energy requirement is amply covered by the utilization of their own fat deposits; it is the ensuing acidosis rather than the starvation that causes the above-mentioned untoward symptoms.

Since the alkalis cannot be used to combat acidosis, on account of their water binding power, and the use of insulin is inadvisable because of

Five Hundred Calory Diet

Diagnosis	NaCl.	Protein	Fat	Carbohydrate	Calories
Obesity	0	50	11	50	500
Breakfast	**Grams**	**Protein**	**Fat**	**C. H.**	**Calories**
Grapefruit	100	1	0	5	148
Eggs	1	7	6	0	
Oatmeal Muffins	1	3	2	3	
Lunch					166
Tomato Salad	100	1	0	3	
Mayonnaise	Mineral Oil				
String Beans	100	2	0	5	
Asparagus	100	1	0	3	
Cottage cheese	45	9	0	2	
Oatmeal muffins	1	3	2	3	
Strawberries	60	1	0	4	
Dinner					185
Broiled chicken	110	18	1	0	
Summer squash	100	1	0	3	
Carrots	90	1	0	8	
Lettuce salad	66	1	0	2	
Mayonnaise	Mineral Oil				
Sliced peaches	100	1	0	9	
Total		50	11	50	499

Vitamins:

* Indicates good source.
** Indicates excellent source.
Incomplete data available on vitamins D and E.

A	B	C	D	E
Egg Yolk**	Grapefruit**	Grapefruit**	Egg Yolk*	Lettuce
Carrots**	Tomato*	Tomato*		
Lettuce*	Lettuce*	Lettuce**		
Tomato*	Carrots*	Carrots*		
String beans*	String beans*	Peach*		

Mineral Salts:

Ca	Mg	K	Na	P	Cl	S	Fe	NaCl.
0.735	0.173	2.343	0.676	0.911	0.748	0.685	0.0292	0.722

possible hypoglycemic reactions, it is necessary to carry off as much as possible of these metabolites by abundant diuresis and high water intake. To avoid the retention of water it is necessary to lower the intake of certain minerals. A mineral deficiency in the diet, in the first place that of sodium chlorid, alters the water binding powers of the tissues in such a way that water retention will not occur. In a recent issue of the *Klinische Wochenschrift,* Starkenstein [4] proved this point experimentally. Functional water tests which I have done on obese patients on a salt-free regimen show that when this precaution is carried out the water balance becomes negative, and the four-hourly output is in excess of the test intake.

The regimen which we are following as a routine in uncomplicated cases of obesity consists, as closely as possible, of an adequate protein intake, since protein restriction in the treatment of obesity—in addition to the acidosis—produces a notable weakness. We also maintain as high a carbohydrate intake as possible, within the caloric limits, in order to reduce the acidosis to a minimum. We restrict the patient's salt intake to a maximum of 2 grams daily. If the patient fails to show a satisfactory loss in body weight the salt is promptly withdrawn altogether. The usual response is a considerable increase in the diuresis, as well as a notable diminution of the patient's thirst.

The diets, in addition that they must meet the patient's protein requirement and obviate a carbohydrate privation acidosis, must contain the necessary vitamins and, if feasible, should contain calcium and phosphates in adequate quantity, a point that is frequently overlooked in reducing dietaries.

Such a regimen, however, can never be carried out in the patient's home. Institutional treatment is absolutely necessary, and only then of avail if a skilled dietitian, experienced in the handling of metabolic patients, is available.

Fillers, like agar-agar and similar substances, must be used to give sufficient bulk to insure regular bowel movements, since not only the low amount of ingested food, but especially a salt-free diet, is notoriously constipating.

Constipation, in connection with the acidosis, may be a seriously disturbing factor. Headache, malaise, nausea, vomiting, and an increasing feeling of weakness, are often the consequences of unskilled management of reducing dietaries. But if the above-mentioned precautions are taken, these symptoms are rarely of importance. The softness and lubrication of the feces will be in-

Six Hundred Calory Diet

Diagnosis	NaCl.	Protein	Fat	Carbohydrate	Calories
Obesity	0	60	13	60	600
Breakfast	**Grams**	**Protein**	**Fat**	**C. H.**	**Calories**
Cantaloupe	100	1	0	10	168
Eggs	1	7	6	0	
Oatmeal muffins	1	3	2	3	
Lunch					223
Cucumber salad	66	1	0	2	
Oatmeal muffin	1	3	2	3	
Cauliflower	100	1	0	4	
Zucchini	100	1	0	3	
Cottage cheese	100	21	1	4	
Strawberries	70	1	0	5	
Mayonnaise	Mineral Oil				
Dinner					206
Lettuce salad	66	1	0	2	
Mayonnaise	Mineral Oil				
Asparagus	100	1	0	3	
Carrots	100	1	0	9	
Tomato	100	1	0	3	
Smelt	90	16	2	0	
Apricots	70	1	0	9	
Total		60	13	60	597

Vitamins:

* Indicates good source.
** Indicates excellent source.
Incomplete data available on vitamins D and E.

A	B	C	D	E
Egg yolk**	Cantaloupe*	Lettuce**	Egg yolk	Lettuce
Carrots**	Carrots*	Tomato**		
Cantaloupe*	Tomato*	Carrots*		
Tomato*	Cauliflower*			
Lettuce*	Lettuce*			

Mineral Salts:

Ca	Mg	K	Na	P	Cl	S	Fe	NaCl.
1.134	0.192	2.490	1.193	1.320	1.331	0.878	0.0098	0.870

sured by the use of mineral oil, which is served in mayonnaise.

I wish to say a word or two about the Spa treatment of obesity, which has a wide reputation. The success is commonly ascribed to the healing "waters" of that particular spring. The explanations of the result are, however, a shameful record of medical commercialism and superstition. As a matter of fact, the famous Carlsbad treatment of obesity consists of eating little, much exercise, the induction of sweating, and the ingestion of huge amounts of hypertonic solutions, which lead to a rapid dehydration of the body. Essentially these measures are correct. The waters are alkaline, and therefore possibly useful in neutralizing some of the acid waste products previously mentioned. The misleading of the patient by unduly laboring unessential details and the careful suppression of relevant ones is reprehensible.

For the patient whose basal metabolism is below normal, the administration of thyroid extract in sufficient doses to raise the value to normal is indicated. I must add that thyroid medication in uncomplicated cases of obesity, for reasons mentioned above, constitutes an abuse of sound therapeutics. Strouse et al.[5] have shown that a hypothyroid origin obtains in only a small percentage of obesity patients—in our experience only about 15 per cent of the cases show a basal metabolism value below 10 per cent. Very often thyroid medication, even in hypothyroid cases, will produce little or no practical results. In these cases we follow Schmidt and Lorant's[6] method of sensitizing the patient with foreign protein injections, usually milk, beginning with 1 to 3 cc. and increasing the dose every few days until a reaction is obtained.

To what lengths in this connection some authors may go is shown by a recent article of Rachel Hirsch,[7] wherein she advocates the non-dietary treatment of obesity, and relies solely on thyroid medication and foreign protein injections in unselected cases. Thyrotoxic reactions very often follow such rash methods of treatment, which may be described as sheer fanaticism.

I will touch here only lightly on the other phases of obesity. They are partly too well known, partly too obscure to merit a thorough discussion. I will only mention postpartum obesity, that associated with deficiency of the posterior lobe of the pituitary gland, and postclimacteric obesity. The type in these cases is often mixed—the etiology may be partly overfeeding, partly a concomitant

Eight Hundred Calory Diet

Diagnosis	NaCl.	Protein	Fat	Carbohydrate	Calories
Obesity	2	60	13	111	800
Breakfast	**Grams**	**Protein**	**Fat**	**C. H.**	**Calories**
Orange	100	1	0	10	182
Eggs	1	7	6	0	
Toast	20	2	0	12	
Lunch					289
Cabbage Salad	50	1	0	3	
Mayonnaise	Mineral Oil				
Carrots	100	1	0	9	
Cauliflower	100	1	0	4	
Cottage cheese	80	17	1	3	
Baked apple	100	1	0	20	
Bread	15	2	0	8	
Dinner					326
Lettuce salad	66	1	0	2	
Mayonnaise	Mineral Oil				
String beans	100	2	0	5	
Hubbard squash	90	1	0	8	
Veal cutlet	80	19	6	0	
Figs	100	1	0	19	
Bread	15	2	0	8	
Total		60	13	111	797

Vitamins:

* Indicates good source.
** Indicates excellent source.
Incomplete data available on vitamins D and E.

A	B	C	D	E
Egg yolk**	Orange*	Orange**	Egg yolk	Lettuce
Carrots**	Cabbage*	Cabbage**		
Lettuce*	Carrots*	Lettuce**		
String beans*	Cauliflower**	Carrots*		
Squash*	Lettuce*	Apple*		
	String beans*			

Mineral Salts:

Ca	Mg	K	Na	P	Cl	S	Fe	NaCl.
1.204	0.199	2.516	1.092	1.149	1.328	0.786	0.0102	0.756

hypothyroidism (especially notable in the postclimacteric obesity).

In pituitary and postclimacteric cases, gland injections are sometimes of a certain limited value, with or without thyroid. Thyroid medication should be, in these as in any other cases of obesity, restricted to those with a true thyroid deficiency, as proved by a lowered basal metabolism.

In closing I wish to emphasize again that obese patients as a rule retain water under normal conditions, and even more so when on an undernutrition diet. This water retention can be met by a limitation of the mineral intake, notably that of sodium chlorid. The other difficulty in the treatment of obesity—acidosis—must be met by an adequate carbohydrate supply, and the protein, vitamin, calcium, phosphate and iron intake must be kept up to maintenance level at least.

Drugs and gland products are only indicated in certain selected cases of known etiology.

Arrowhead Springs.

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DISCUSSION

Ernest S. du Bray, M. D. (870 Market Street, San Francisco)—There are numerous observers who will not agree with one of the preliminary statements of the authors, namely, "that the problem of obesity is strictly a nutritional one, regardless of the etiology." The underlying causes of obesity remain obscure. However, we do see both exogenous and endogenous types and, further, the important mixed type in which both chemical and endocrine factors are at work.

The idea of restricting salt and water in the treatment of obesity is not new, but has been advocated especially by continental clinicians for some years. These measures must be supplemented with a reduction in the total diet and a limitation of the fat content. In my own work I usually allow most patients a total diet of 1200 calories per twenty-four hours, of which the fat does not exceed 75 grams, and the rest is made up of protein and carbohydrate. It is true that some patients fail to lose weight on such a diet and further restrictions are necessary.

In the presence of vascular hypertension associated with overweight a salt-poor diet is often useful both

Twelve Hundred Calory Diet

Diagnosis	NaCl.	Protein	Fat	Carbohydrate	Calories
Obesity	2	70	20	185	1200
Breakfast	**Grams**	**Protein**	**Fat**	**C. H.**	**Calories**
Prunes	100	1	0	20	412
Orange juice	100	0	0	12	
Eggs	2	14	12	0	
Toast	40	5	0	24	
Lunch					386
Grated carrot salad	66	1	0	6	
Mayonnaise	Mineral Oil				
Brussels sprouts	100	1	0	3	
Corn	100	3	1	20	
Codfish	90	17	1	0	
Grapes	100	1	0	20	
Bread	30	3	0	17	
Dinner					402
Tomato-lettuce salad	100	1	0	3	
String beans	100	2	0	5	
Turnips	100	1	0	7	
Baked potato	100	2	0	18	
Roast chicken	50	14	6	0	
Raspberries	100	1	0	13	
Bread	30	3	0	17	
Total		70	20	185	1200

Vitamins:

* Indicates good source.
** Indicates excellent source.
Incomplete data available on vitamins D and E.

A	B	C	D	E
Egg yolk**	Orange*	Orange**	Egg yolk	Lettuce
Carrots**	Prunes*	Tomato**		
Tomatoes*	Corn*	Raspberries**		
String beans*	Carrots*	Lettuce**		
Prunes*	Tomato*			
Lettuce*	String bean*			
	Turnips*			
	Potato*			
	Lettuce*			

Mineral Salts:

Ca	Mg	K	Na	P	Cl	S	Fe	NaCl.
0.446	0.297	3.486	0.860	1.049	1.080	1.103	0.0152	0.860

in relieving the disagreeable symptoms due to vascular disturbance and also in reducing the body weight. I have not used limitation of fluid intake in the treatment of uncomplicated obesity. It may be a valuable measure to adopt when combined with salt-poor diets as the present authors advocate. The place of thyroid feeding in the management of certain types of obesity is well established.

It is, of course, ideal to have patients undergoing reduction regimens in hospitals or institutions where all factors can be readily controlled. We all realize that it is only a small proportion of patients who are willing and able to spend the time and money necessary for such hospitalization. Consequently methods elaborate and complicated are not practical for the average patient. I find a little time spent in the beginning, instructing the patient with reference to food values and the preparation of quantitative diets, is the most effective therapeutic measure available.

Until comparatively recently obesity has received scant attention by the medical profession. With the increasing knowledge of its importance as a precursor of diabetes, cardiorenal-vascular diseases and the arthropathies, strenuous efforts are now being made to salvage this condition from the hands of the quacks and faddists who have long recognized it as an important source of revenue.

The cooperation of the obese patient can usually be obtained if the physician in charge can offer a definite program constructed on rational and positive dietetic and physiotherapeutic lines. About all avoid too rapid reduction of the obese because this is attended with certain real dangers.

❦

Esther B. Clark, M. D. (300 Hamilton Avenue, Palo Alto)—The authors are quite right in their primary statement that obesity is primarily a nutritional disturbance, *i. e.*, a caloric intake which exceeds the caloric output. The factors causing the nutritional disturbance may be any of several, anything in fact that decreases the energy expenditure or alters the normal appetite regulatory mechanism so that the caloric intake will be excessive.

The study here presented on the water retention in obese individuals is a distinct contribution, and does much to explain the failure of many obese individuals to lose on a low caloric diet, at least for some time. The treatment with a low salt diet combined with a low caloric intake is entirely logical.

It is rather difficult to conceive of patients failing to lose weight if they are kept on a diet well below their caloric expenditure over a sufficiently long period. There must be a point beyond which there is no longer a water retention, and then weight loss occurs. The tissue metabolism must continue independently of the water and salt metabolism. We have never seen a

water retention sufficient to result in a demonstrable edema in an obese individual (with normal renal and cardiac function) who was on a reducing regimen.

❊

William M. Happ, M. D. (523 West Sixth Street, Los Angeles)—It is a pleasure to read a paper on the treatment of obesity in which the endocrine glands are relegated to a minor rôle, and the attention centered on the diet as the factor par excellence in weight production and reduction. There is undoubtedly some factor responsible for the fact that some individuals put on weight easily and others with difficulty. This tendency to "easy fattenability" is strikingly familial and can be observed in young babies. There are, however, no reliable data proving that the glands of internal secretion are primarily responsible for this condition. The peculiarity in metabolism of these patients makes it more difficult for them to lose weight than is the case with other individuals. It is interesting that only 15 per cent of Doctor Modern's patients showed basal metabolism of — 10 or less, indicating that hypothyroidism plays only a minor rôle in these cases.

The most interesting point advanced by the authors is the rôle of water metabolism in the obese and the importance of salt restriction in combating the water retention present in these patients. The tendency to water retention is probably only one expression of the metabolic peculiarity of the obese, and further studies in mineral metabolism should be of great importance.

The degree of acetone body acidosis which develops during the first few days on a low caloric diet is not, in our opinion, of any serious consequence unless the carbohydrate reduction be made too abruptly. In those patients who develop a ketosis readily, this can be corrected by increasing the carbohydrate intake with subsequent more gradual reduction. A sudden reduction from the patient's usual diet to an intake of 50 grams of carbohydrate (diet I) would almost certainly produce a degree of ketosis due to the sudden attack on the body fat. A gradual reduction in carbohydrate would obviate this.

The emphasis on an ample protein, mineral and vitamin content of the reduction diet is certainly well founded. The diets should be planned, as the authors have done, to prevent a deficiency in these elements. This is particularly important in children and adolescents where the factor of growth must be allowed for. The whole subject of weight reduction has been surrounded by a veil of mystery and secrecy, which has been fostered by quacks and promoters of patent cures. In putting this subject on a scientific plane the authors have rendered a real service.

❊

Doctor Modern (closing)—It is true that continental physicians have advocated the restriction of the salt intake in obesity in the past few years, but as demonstrated in a recent paper by Franz Kisch of Marienbad, have never carried it to its logical conclusion. Probably owing to the fact that the problem of obesity was taken up most extensively by physicians practicing in Spas, the salt restriction was usually accompanied by the intake of highly mineralized waters which more than offset any possible benefit of the sodium chlorid restriction in the diet. Moreover, salt restriction means about 2 to 5 grams of NaCl according to continental conception. (See David, O., Treatment of Obesity, Med. Klin., 1925, xxi, 1751.) In connection with the salt-free diet, which lowers thirst considerably, it is necessary to advise the patient to drink a certain minimum amount of water with no upper limits for reasons already mentioned. We usually advise about from one and a half to two quarts a day.

The purpose of this paper is to call attention to the necessity of a scientific treatment of obesity. This can be done only by careful analysis of the individual case. The prevalent vogue of indiscriminate feeding of thyroid is as pernicious as the equally popular orange-juice fast. The former has its place only in those patients whose basal metabolism is definitely lowered, the latter disregards all principles of sound dietetics. The obese patient has been too long a victim of unscrupulous practitioners, medical and otherwise.

I fully agree with Doctor du Bray that the intelligent cooperation of the patient is absolutely necessary. At Arrowhead Springs the patient is taught daily by the dietitian how to calculate his diet and what are the principles underlying it. The patient himself has to make out his own menu toward the end of his stay, and, via palate and scales, he quickly learns to realize pitfalls and difficulties. I believe that a diet of 1200 calories with a fat intake in the neighborhood of 75 grams leaves too little leeway, either for an adequate protein or carbohydrate intake. Our 1200 calorie obesity diet contains never more than 30 grams of fat, so that the patient receives almost normal meals except for butter, fat meats, and rich desserts.

No originality is claimed for any of our contentions, but if this paper has succeeded in calling attention to some difficulties, certain principles and also abuses in the management of the obese patient, it has achieved its purpose.

THE TECHNIQUE OF LARYNGECTOMY*

By H. B. Graham, M. D.
San Francisco

Discussion *by I. W. Thorne, M. D., San Francisco; James F. Percy, M. D., Los Angeles; Simon Jesberg, M. D., Los Angeles.*

THIS paper will deal only with those favorable cases of intrinsic carcinoma of the larynx which have been discovered early and do not show the extensive gland or esophageal involvement which necessitates wide dissection.

It would be a boon to these patients if the general physician would call in a laryngologist as soon as a hoarseness became chronic, for it is only through early interference that any hope can be given to the poor sufferer from this dread disease. Those cases are most favorable which are limited by the cartilaginous box and which have not been interfered with before biopsy. Whether we elect x-ray, fulguration, radium or surgical intervention or a combination of some of these methods, they are always more successful if the case has not been irritated by ill-advised attempts with local applications.

PREOPERATIVE CARE

All patients will be immeasurably more comfortable after the operation if they have been properly studied and prepared beforehand. The teeth should be put in the best possible repair. The mouth is hard to sterilize and hard to keep clean during and immediately succeeding the operation and an attempt should be made to put it in good condition for a few days preceding the operation. Any of the accepted methods such as swabbing with acroflavin may be used. It is wise to avoid much interference with the pharynx during the operation, as the anesthesia may be much lighter by so doing, and the possibility of vomiting and soiling the wound lessened.

Before operation, the diet, blood pressure, urine, blood analysis, and general condition of the patient should be thoroughly studied and regu-

* Read before the Eye, Ear, Nose, and Throat Section of the California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

lated by a competent internist, who can also be of great aid in the postoperative period.

It is incumbent on the operator to see that the operating room is properly equipped with the special apparatus and personnel necessary for a smooth and rapid operation and that the assistants be told beforehand what is going to happen and how. The first half of the operation is done under local anesthesia, the last half may be under ether; a suction apparatus is used throughout. One assistant should manage the suction, one act as assistant to the operator, and another as anesthetist. These, together with two nurses, should make an efficient working crew. There is a disadvantage in a larger number.

THE OPERATION

The ether is to be given through a tube, which is to be inserted into the severed trachea and which should be provided with a stopper made by wrapping the rubber tube with gauze, thicker at the top than at the bottom. The anesthetist is thus at some distance from the patient, and the stopper prevents any blood or secretion from entering the trachea.

The skin is infiltrated with novocain—adrenalin in the midline, from the hyoid bone to the clavical and in a line over the hyoid bone. The deep tissues about the larynx are then injected and a T-shaped incision made down to the larynx. The larynx is skeletonized, the superior thyroid and superior laryngeal arteries being tied as early as possible. After incising and tying the thyroid gland in the midline, an injection of a few drops of 5 per cent cocain with adrenalin is made directly into the trachea, and soon after the trachea is cut through at the first ring. Care should be taken at this stage to see that absolutely not a drop of blood enters the trachea, as the prevention of pneumonia depends upon the freedom of the lungs from blood and secretion. The anesthesia tube may now be inserted into the trachea and the larynx freed from the esophagus from below upward, the cornua being severed close to the larynx.

At this stage of the operation I have found it advisable to follow MacKenty in giving the patient an ether anesthesia, as by this time the mental state of the patient is usually depressed and it is a great relief to the patient to feel that the end of the operation is near. As the toilette of the wound will require nearly an hour more it is a matter of humanity to save the patient this mental suffering.

The larynx is now freed from the pharynx and the opening sewed by a double layer of catgut sutures, after the secretions have been removed by the suction tube cautiously introduced into the pharynx. The pharynx is painted with acroviolet.

The wound closure is made with only four silkworm-gut sutures, thus allowing for free drainage with rubber tubes which have been passed deeply into the neck so as to drain all pockets. The trachea is sewed into the lower portion of the wound, the skin being accurately approximated to the mucous membrane with as little trauma to the cartilage as possible. The tissues about the trachea should be disturbed as little as possible so as to avoid the formation of pockets in which secretions could accumulate. The opening to the trachea cannot be too large as it always contracts to a remarkably small orifice, causing much inconvenience to both patient and surgeon in the months to follow. It is well even to remove all subcutaneous fat about the opening. The secretions are prevented from entering the trachea by a silver tube which has been wound tightly with gauze impregnated with bismuth vaselin.

POSTOPERATIVE CARE

The after-care should be under strict supervision of the surgeon and should include frequent suction with a perfectly acting suction apparatus. In case of infection the wound should be opened rather than let the deeper sheaths of the neck become involved. It is easy to insert silkworm-gut sutures in a few days and bring the skin together again. The patient is gotten out of bed on the fourth day if possible, and is encouraged to sit up as much as possible and so help in the prevention of lung complications.

Feeding is done through a tube which is inserted through the nostril halfway down the esophagus before the pharynx is closed. This tube, if not too large, is well tolerated for nine days and prevents the possibility of the food entering the wound in case any of the sutures should give way. Thick liquid food may be forced through the tube with a syringe and then water passed through to flush it well. There is but little suffering observed in the operated patients and they learn to speak quite readily after healing has taken place.

490 Post Street.

DISCUSSION

I. W. Thorne, M. D. (490 Post Street, San Francisco)—The technique of total laryngectomy does not differ in the intrinsic form of carcinoma and the extrinsic, except for the wideness of the dissection in the latter.

Preparation of such a patient, as Doctor Graham has stated, is most important—cleansing of the teeth and gums with brush and a good dentifrice after each feeding, and the frequent rinsing out of the mouth with Dakin's solution, has become my method; also the use of dental floss between the teeth prior to the brushing. Where artificial teeth are worn, scrupulous care of these is to be practiced. This local preparation should prevail for four or five days before operation, if possible.

I agree with Doctor Graham that the less local treatment these patients get before coming to operation the better; a biopsy is exceedingly dangerous; the diagnosis can be, and should be made without it.

Local anesthesia has never appealed to me in these cases for the following reasons: firstly, the carrying of infection or, rather, implantation infection; secondly, the possibility of blood vessel accident; and thirdly, the possible struggle (in stage of excitement) with an open wound when the general anesthetic is begun in the second stage of the operation. Ether throughout the procedure, to me is much the quieter and simpler method.

A time-saving maneuver, which I have practiced, is as follows: After the trachea has been severed and the free dissection of the larynx begun, then as the esophagus and the pharynx are opened I follow up the freeing of the larynx with the first layer of sutures in the esophagus and the larynx. This obviates the necessity of suction and prevents soiling of the wound to the same extent. The trachea is then sewn in place

and the second row of esophageal and pharyngeal sutures placed and tied.

As Doctor Graham says, the after-care is very important; in fact, upon it depends the success or failure of the whole procedure.

The use of a permanent feeding tube through the nose is troublesome, uncomfortable, and not clean. I much prefer to pass through the mouth and pharynx at feeding times a small stomach tube: this does not disturb your sutures any more than a permanent tube, and the patient is much more comfortable between feedings.

The tracheal opening in the skin certainly does contract and the removal of subcutaneous fat does not prevent this; in fact, it increases this possibility, and the contraction will be just so much greater. A tracheotomy tube must be worn for six months or so, after which time the patient may assume the entire care of it himself. For weeks, however, the operator will have to place and replace this tube as it is forced out, for the patient becomes very nervous over this slight accident, and patient training and encouragement are necessary before he will assume this care.

✲

James F. Percy, M. D. (1030 South Alvarado Street, Los Angeles)—In my experience, removal of the larynx is one of the most discouraging procedures in surgery. The immediate postoperative results are usually practically perfect, but within two weeks most of these victims of cancer are dead from bronchopneumonia. Just now I cannot recall that I have ever seen an early case of laryngeal cancer, even of the intrinsic type. I get them after respiratory obstruction and repeated attempts at making an exact diagnosis, including one or more biopsies, have done their worst. When surgeons will give up this mischievous and damaging practice in any form of cancer is one of the real educational problems for the future to solve.

The technique as outlined in Doctor Graham's paper is above criticism, except possibly from the viewpoint of the anesthetic. I give practically all of my patients one hypodermic dose (only) of hyoscin gr. 1/150, and morphin gr. ¼, after they are placed on the operating table. Ether is started as soon as the operative field is prepared. This is employed until the T-shaped incision can be made through the skin with the cautery knife. By that time the hyoscin and morphin are usually all that is required to take the patient through to the completion of the operation. In this way the total quantity of ether rarely exceeds two or three ounces. Every step of the operation is done with my cautery knife. Thus I have no blood in the field at any time, and the patient is also relieved of the danger of my disseminating and stimulating his cancer with a cutting instrument that is not fortified by heat.

Laryngectomy will never have a low postoperative mortality until surgeons can remain with the patient, as I am told MacKenty does in New York, until they feel that the period for complications has passed. Matas of New Orleans meets a similar problem in his postoperative aneurysmorrhaphy patients by personally remaining with them all night the first night. The second and third nights his first and second assistants take their turn, while on the fourth night Doctor Matas again remains with the patient if it is necessary. When his assistants are on duty they also report by telephone to him every two hours during the night. Only by the general adoption of some such plan comparable to that which has been so successfully worked out by these two master surgeons will the present oppressive mortality of total laryngectomies be reduced to within reasonable limits.

✲

Simon Jesberg, M. D. (500 South Lucas Avenue, Los Angeles)—Doctor Graham's technique is described in such a manner that it seems delightfully simple and easy of accomplishment. However, the best results of this kind of surgery cannot be had till these cases are turned over early to the man who has perfected himself in this field of surgery. Early diagnosis would more often be made if laryngologists considered every middle-aged patient complaining of hoarseness, as cancer of the larynx until proven otherwise. The diagnosis of early cases is not always as easy to establish; biopsy in many cases is indispensable, but should be followed by surgery as soon as diagnosis is established. Tracheotomy about ten days before laryngectomy lessens the patient's chance of postoperative pneumonia and mediastinal infection. This can be done with the cautery knife. thus probably preventing dissemination of cancer cells.

✲

Doctor Graham (closing)—Instead of using more ether in my cases I am gradually reducing the time consumed in the operation and doing it all under novocain. If the patient is in good condition I finish, by preference, with the local anesthetic. None of my patients have objected to the nasal feeding tube, and the mortality in four cases this year has been nil.

THE LURE OF MEDICAL HISTORY*

CONTRIBUTIONS OF AMERICA TO SURGERY

PART I

An Account of the Surgical Accomplishments of Over One Hundred Pioneers in American Surgery

By Harold Mayo F. Behneman
San Francisco

PROGRESS always rests upon a small number of men of genius. Thus we have in the science of surgery in every epoch and every country, a certain number of renowned men who are the causes and pillars of this achievement." This quotation is from the pen of Dr. William J. Mayo.[1]

Through many generations, then, the writer of this article will present in the following pages only the more famous characters in this medical saga which deals with our own land of America.

The honor of leading this procession of famous names belongs to John Bard (1716-1799) of New York, who in the year 1759, did *three laparotomies for extra-uterine pregnancy*. The "case-history" (as the clinical record was called in those days) is well worth quoting: "Mrs. S., the wife of a mason, about twenty-eight years of age, having one child without any uncommon symptoms, either during her pregnancy or labor, became as she imagined a second time pregnant. She was more disordered in this than in her former pregnancy, frequently feverish, the swelling of her belly not so equal, nor the motion of the child so strong and lively. At the end of nine months, when she expected her delivery, she had some labor pains, but not without absence of flow of waters or other discharge. The pains soon went off, and the swelling in her belly became gradually less, but there still remained a large indolent, movable tumor, inclining a little to the right side. She had a return of her menses, con-

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* Part Two of this paper will appear in the June issue of this journal.

*This account of American surgical accomplishments is written by one who has known none of those of whom he writes, and therefore finds it difficult to present colorful, personal items concerning the men mentioned. It is then, mainly a collection from many sources of contributions made by Americans in about two hundred years of American surgery.

Grateful acknowledgment is made to Dr. Fielding H. Garrison, Washington, D. C., for his valued correction of the original manuscript.

The references will be printed at the conclusion of the entire article.

Dr. Morton making the first public demonstration of etherization at Massachusetts General Hospital, surrounded by medical staff, October 16, 1846.

tinued regular five months, conceived again, and enjoyed better health; the swelling of her belly became more equal and uniform, and at the end of nine months, after a short and easy labor, she was delivered of a healthy child, the tumor on the right side had again the same appearance as before her last pregnancy. Five days after delivery she was seized with a violent fever, a purging, a suppression of the lochia, pain in the tumor, and profuse fetid sweats. By careful treatment, these threatening symptoms were, in some measure, removed but still there remained a loss of appetite, slow hectic fever, night sweats and a diarrhea. To the tumor, which continued painful, and gradually increasing, were applied fomentations and emollient poultices; and, at the end of nine weeks I perceived so evident a fluctuation of matter in it that I desired Doctor Huck, physician to the Army, to visit this patient with me and be present at the opening of it. From the whole history we concluded that we should find an extra-uterine fetus. I made an opening in the most prominent part of the tumor, about the middle of the right rectus muscle beginning as high as the navel, and carrying it downward. There issued a vast quantity of extremely fetid matter, together with the third phalanx of a finger of a child. Introducing my finger by the side of the abscess I found an opening into the cavity of the abdomen, through which I felt the child's elbow. I then directed my incision obliquely downward to the right ileum, and extracted a fetus of the common size at the ordinary time of delivery. The frontal, parietal and occipital bones, and also of the third phalanges of the fingers of one hand separated by putrefaction, remained behind, which I also took out. We imagined the placenta and funis umbilicus were dissolved into pus, of which there was a great quantity. By the use of fomentations and detersive injections, while the discharge was copious, fetid, and offensive, and by the application of proper bandages, and dressing with dry lint only, when the pus was laudable, the cavity contracted, filled up, and was cicatrized in ten weeks. The source of the hectic being removed, with the help of the bark elix. of citriol, and a proper diet, she quickly recovered good health. Her milk, which had left her from the time she was first seized with the fever, returned in great plenty after the abscess was healed, and she now suckles a healthy infant. New York, December 25, 1759."

His diagnosis was certainly to be commended in those days of incomplete education and lack of association with other men.

His son, Samuel Bard (1742-1821), *organized the Columbia University Medical School,* and became its dean. He was physician to George Washington, when the seat of the government was in New York. He contributed an excellent manual of midwifery in 1807, and in 1813 became president of the College of Physicians and Surgeons in New York.

The *removal of an ectopic pregnancy,* was twice successfully achieved by William Baynham (1749-1814) of Virginia during the years from 1790 to 1799.

The first recorded amputation of the shoulder joint was done in 1781 by John Warren (1753-1815), the founder of Harvard Medical School. He was among the first to advocate healing by first intention and was professor of anatomy and surgery at Harvard for over thirty years. He was the chief founder of the Massachusetts Medical Society and its president for eleven years. His son, John Collins Warren (1778-1856), became a very resourceful surgeon of New York.

William Shippen, Jr. (1736-1808), of Philadelphia was *the first public teacher of obstetrics in this country,* an event of some consequence for the advancement of male midwifery. He organized, with John Morgan (1735-1789), the medical department of the University of Pennsylvania, and was professor of anatomy and surgery in that institution. He gave the first course of lectures presented in a medical school in America on November 14, 1765. From 1777 to 1780, he was Surgeon-General of the United States Army. In the same field, notice must be taken of Charles McKnight of New York, who in 1794 removed by celiotomy, a nine months old fetus from an extra-uterine pregnancy, with full recovery.

John King of Edisto Island, South Carolina, performed a remarkable operation for abdominal pregnancy in 1816, saving both mother and child by cutting through the walls of the vagina and applying forceps with abdominal pressure exerted on the fetus from above. He wrote the *first book on extra-uterine fetation* in 1818, entitled "An Analysis of the Subject of Extra-Uterine Foetation, and of the Retroversion of the Gravid Uterus."

We must not overlook Thomas Bond (1712-1784). "He was apparently *the first in the United States to perform lithotomy,* although there is a record of such a procedure in 1756, a Doctor Jones of New York being credited with this procedure. Benjamin Franklin (1706-1790) of Boston, inventor of the bifocal lens and the flexible catheter, "asserts that it was Doctor Bond who founded the Pennsylvania Hospital." Besides their surgical contributions, "Bond and his

The Danville, Kentucky, house in which Ephraim McDowell performed the first ovariotomy. The operation was performed in the room on the left. Cut with kind permission of Dr. August Schachner.

son, PHINEAS BOND, rendered distinguished services to the American cause in 1776, by taking an active part in the organization of the medical department of the Army." [2]

A name familiar to all medical men is that of EPHRAIM MCDOWELL (1771-1830), who was *the father of gynecology in this country.* "Impressed with the sad and hopeless fate of women with ovarian disease," in 1809 he performed the first ovariotomy for the specific purpose of curing ovarian disease. He is rightly known as the "Father of Ovariotomy," and was very skillful in many branches of surgery. Friedberg states that "he founded abdominal surgery." [3] His life story has been ably and faithfully told by Samuel D. Gross and again by August Schachner of Louisville, Kentucky. McDowell's life was full of activity and events of interest. Finally settling in Danville, Kentucky, then an outpost of civilization, his fame as a surgeon spread fast, and his first ovariotomy patient lived for thirty-eight years after the operation. I wish I could present the whole story in detail of that eventful occurrence. McDowell happened to be called to a small village about sixty miles from his home to see a sick woman, one Jane Todd Crawford. When they met "it was a case of a daring man and a courageous woman coming together to settle a problem." [4] The colorful, romantic story of the events that followed is told in detail by Dr. August Schachner.[4] This brave woman listened carefully to McDowell's explanation of what he would like very much to do to her, and weighed the situation carefully for quite a while. He told her of the belief he had that he could remove this mass within her abdomen, but also honestly explained the great risk she was taking if she submitted to surgery. In the dark days before anesthesia, and modern Listerian antisepsis, fear tore at the hearts of those who realized the great mortality.

But Mrs. Crawford had deep faith in McDowell's ability and sincerity, and one day in 1809 she appeared in McDowell's home in Danville, requesting that he operate. "Considered in the light of present-day surgery, the features of the operation which bear emphasis are:

1. It was performed without an anesthetic.
2. The incision was on the left side, nine inches long, parallel to and three inches from the rectus abdominis muscle.
3. The tumor was freely movable, with a pedicle of sufficient length to enable ligation before evacuation of the contents.
4. After opening up, the successive steps were: ligation of the fallopian tubes and pedicles, near the uterus, evacuation of the contents, extraction and removal of the solid portion, replacement of the intestines, the draining of the peritoneal cavity by turning the patient over, and the closure of the abdomen with interrupted sutures allowing ligation of the pedicle to pass out the lower end.
5. The time of operation was twenty-five minutes.
6. The weight of the cyst was twenty-two and one-half pounds.
7. The recovery of the patient: in five days she was up making her bed and in twenty-five days she went home, and twenty-one years later McDowell exhibited her alive and healthy.[4]

"During many years McDowell's operation of ovariotomy failed to maintain professional approval."[3] Despite all this "it soon became the most successful major operation in surgery."[4] McDowell repeated this operation many times, with equal success.

In the next thirty-five years only four men successfully performed ovariotomy; they were Nathan Smith, Alban Goldsmith, David L. Rodgers and John Bellinger.

The first of these men, NATHAN SMITH (1762-1829), of Massachusetts, a medical graduate of Harvard in 1790, performed the second successful ovariotomy in 1821. He was a great organizer, who filled the chairs of Physiology and all other departments in the medical school of Dartmouth College, and later in Yale, Bowdoin, and Vermont. He was a very able lithotomist, and did the first staphylorraphy. Oliver Wendell Holmes described him as not "only filling a chair, but a whole settee of professorships."

Two famous surgeons, brothers too, JOHN LIGHT ATLEE (1799-1885) and WASHINGTON LEMUEL ATLEE (1808-1878), *really established ovariotomy* after McDowell's pioneer work. They perfected a technique which enabled them to perform in 1842 and 1843, four hundred and sixty-five operations. As with McDowell, they were at first bitterly condemned by colleagues and contemporaries, but lived to be highly honored and rewarded.

Contemporaries at this time of any note were comparatively few. WALTER BRASHEAR (1776-1860) of Maryland performed the *first successful amputation of the hip joint in America* in 1806. In 1799, while in China as a ship's surgeon, he amputated successfully a woman's breast. "He was a many-sided character—doctor, lawyer, legislator, naturalist, and merchant." [4] His most notable years were spent in Kentucky, from 1813 to 1817.

A hard worker and continuous contributor to our knowledge of surgery, was Frederic Ridgley (1757-1825). A staunch friend of Rush, he was the first teacher of midwifery in Transylvania University, and Surgeon-General to the army of General Anthony Wayne.

Another Kentuckian, Charles McCreary (1785-1826), first successfully excised the clavicle in 1813.

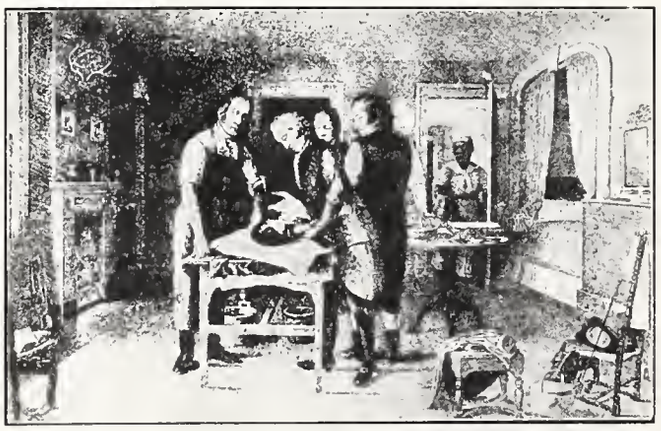
In other branches of surgery we find Philip Wright Post (1766-1822) of Long Island, New York, who was the *first to tie the primary carotid artery in its continuity with success* (1813), as well as the first to ligate the subclavian artery outside the scaleni muscles in 1817. This was considered "his master stroke in surgery."[5] He was the first in America to ligate the femoral artery successfully, which he did in 1796, for popliteal aneurysm. Post was assisted by Valentine Mott and his ligature needle. "This was thought to be a complete success and answer to the taunt: 'What have you American physicians and surgeons ever accomplished?'" He also brought back from Europe the material for America's first museum, according to John Augustine Smith. The latter says we may deduce two useful lessons from Post's life. First, "that fortune is not so capricious in her favor as many imagine, and, secondly, to secure her favor, in other words, to attain the success of Doctor Post we must first acquire his skill and tact and what is perhaps more difficult, certainly more rare, we must practice these qualities with his steadfastness and virtue."[5]

Another great *pioneer in vascular surgery* was Valentine Mott (1785-1865) of Long Island, New York. "It would be impossible to refer in detail to the individual operations, but if we inquire further into the history of the subject, we find that if the records of American operators in the ligature of large vessels (arterial trunks) are excluded, there seems to be little left to the credit of other countries." [9] Mott, in 1818, ligated the innominate artery for the first time in the history of surgery. In this dangerous pre-antiseptic period he successfully ligated one hundred and thirty-eight great arteries for aneurysm. Mott was also a bold and successful operator on the bones and joints. He did the first operation for osteosarcoma of the mandible, and he was as well the first to operate successfully for immobility of the same member. He ligated the common iliac in 1828, was the inventor of several valuable instruments, and amputated at the hip joint in 1824. It is time well spent if one turns back to the third volume of the *American Journal of Medical Science* published one hundred years ago next year, and reads the detailed account of Mott's excision of a clavicle for osteosarcoma. He was at that time professor of surgery at Rutgers College, New York. In the first paragraph of retrospection and advice he writes: "We think it may henceforth be regarded as an *axiom* that it is the duty of a surgeon to operate in every case which allows of a rational hope of success, either of improving the patient's condition or of preserving his life. It is almost superfluous to add that, in arriving at this conclusion, we do not believe it proper for every man who is *nominally* of the profession to assume such high responsibilities, but that we regard those as *surgeons,* and those alone, who have, by conscientious devotion to the study of our science, and the daily multifarious duties, acquired that knowledge which renders the mind of the practitioner serene, his judgment sound and hands skillful; while it holds out to the patient rational hopes of amended health and prolonged life." [7]

Benjamin Winslow Dudley (1785-1870) of Virginia was a contemporary of Mott's. For thirty-five years he was professor of anatomy and surgery in Transylvania University. He performed two hundred and twenty-five lithotomies, without a death until after Case No. 100. He made use of the lateral operation, using the gorget invented by Cline of London. Gross states that he was the *first to ligate the subclavian artery* in 1825 *for an aneurysm* "larger than a quart pitcher." [4] He ligated the common carotid in 1841, and was of note for his theories regarding the use of boiled water and boiled instruments in surgical antisepsis.

"The foremost ovariotomist of all time" was Joshua Taylor Bradford (1818-1871) of Kentucky.[4] At one time the *foremost surgeon of the West,* he performed thirty consecutive ovariotomies with 90 per cent cures and 10 per cent failures.

Now turning to one of the most interesting characters of his age, John McLoughlin (1784-1857), the so-called "Father of Oregon," we find him responsible for the establishment of the first hospital of the great Northwest, and the first Governor on the North Pacific Coast. "His diagnostic and surgical ability was eclipsed only by his ability as a statesman." [8] His life story is one replete with adventure, romance and purpose, most of the latter directed toward medicine and surgery. "The immigrants and the Indians who had learned to love and trust their great white-faced master—in fact the whole little nation along the Columbia wept when he died and felt their little world was more lonesome when John McLoughlin went on his last call." [8] He was a pathfinder and statesman as well as a surgeon of great ability.



Prof. George Kasson Knapp's painting of "The First Ovariotomy." Cut with kind permission of Dr. August Schachner, author of "Ephraim McDowell, Father of Ovariotomy."

The "Willard Parker Hospital for Contagious Diseases" of the Health Department of New York City stands in tribute and as a testimonial to Willard Parker (1800-1884) for over thirty years professor of surgery at the College of Physicians and Surgeons of that city. "He originated the operation of cystotomy (1846-1854) for irritable bladder, and the operation for perityphilitic abscess." [9] He was the first, after Hancock of London (1848), to operate for appendicitis, and tied the subclavian artery five times. He was one of the organizers of the present medical department of Syracuse University. Princeton conferred the LL.D. degree upon him in 1870. He was "so identified with the growth of charitable enterprises in the way of hospitals and dispensaries in New York City, that he was associated with most all of them." [9]

Daniel Brainerd (1812-1866) of New York, *"The pioneer surgeon of the Middle West,"* [10] invented the bone drill, and made several good contributions on the treatment of fractures and deformities. He settled in Chicago in 1837 and organized Rush Medical College in 1843.

William Gibson (1788-1868), scientist, author, artist, and friend of Lord Byron, had an eventful surgical record. In 1835 and 1838 he performed two successful cesarian sections on the same patient, who lived for fifty years after the first operation. In 1824 he published the worthy and once much-used "Principles and Practice of Surgery."

John Rhea Barton (1794-1871), in 1834, was the first surgeon to wire a fractured patella with success.

Advancing now to 1849, we find that Harbert was the first to suggest the operation for celiotomy for ruptured tubal pregnancy in early stages, a starting point in the history of this procedure. Barton, by the way, did an osteotomy for ankylosis of the hip joint in 1826.

Mason Fitch Cogswell (1761-1830) of Connecticut first successfully ligated the common carotid artery for primary hemorrhage in 1803.

Philip Syng Physick (1768-1837) of Philadelphia, "that unsurpassed lithotomist," invented the tonsillotome and was the first to describe diverticulum of the rectum. He is often called the *"Father of American Surgery"*; [10] he was Surgeon-General to the Pennsylvania Hospital in 1794 and professor of surgery in the University of Pennsylvania from 1805 to 1818. He introduced into surgery an operation for artificial anus (1826), the kid and buckskin ligatures (1816), and was the first American to wash out the stomach with syringe and tube in a case of poisoning in 1802.

An Englishman, Daniels, of Georgia introduced the weight and pulley for extension in fractures of the thigh.

A pioneer *Army surgeon* was Samuel Preston Moore (1813-1889). He was an Army surgeon for twenty-six years, and on November 29, 1861, was made Surgeon-General of the Confederacy. In the face of overwhelming difficulties he organized the medical department of the Confederate armies, and founded its literary organ, *The Confederate States Medical and Surgical Journal.* He made a careful study of indigenous plants during the war, as sources of materia medica, when many medical supplies were cut off from the South. Lastly he organized the Association of Army and Navy Surgeons of the Confederacy in 1863.

Another pioneer in surgery was Moses Gunn (1822-1887), first professor of surgery at Michigan and professor at Rush from 1867 until his death twenty years later. "He made many minor and one great contribution to the science of surgery. This was his work on dislocation of the hip joint." [11]

Designated by Gross as "the great commoner of American Medicine" was Warren Stone (1808-1872).

With Doctors Thomas Hunt and Harrison, he founded the Tulane Medical School of New Orleans in which he was "Stone Professor of Anatomy and Surgery." He made many surgical contributions to the *New Orleans Medical and Surgical Journal,* of which he was editor.

Let us now turn to "a spot in the wilderness of the new continent," in a little village in Georgia, where an American, Crawford W. Long (1815-1878) of Danielsville, Georgia, is seen timidly and hesitatingly, but nevertheless independently of all foreign suggestions, attempting to remove, for the first time with ether, a growth from a patient whom he has just put to sleep. This was in 1842, and the chief actor is well-nigh forgotten.

Again the scene turns to America. The lights are brighter, and we are in Massachusetts General Hospital. The date is October 16, 1846. On one side we see W. G. T. Morton (1819-1868) of Charleston, Massachusetts, confidently administering the new letheon, and saying finally to the distinguished operator, Doctor Warren, "Sir, the patient is ready." The operation is performed without a sign of pain, and Doctor Warren, himself amazed, turns to the astonished audience, saying, "Gentlemen, this is no humbug." From that moment the idea of the suppression of pain ceased to be a dream and became a living reality." [6]

Thus to Crawford W. Long is due the honor of having first used ether as anesthesia in surgery in 1842. And thus to John Collins Warren (1778-1865) comes the honor of having *established ether anesthesia* in surgical practice. There is not room nor is it necessary here to discuss the bitter fight that waged through the years as to priority in this discovery. To remember that it is an American contribution is the vital thing and of that we are proud. Those who are interested more in this most fascinating story of the beginnings of ether anesthesia may turn to a paper read before the Johns Hopkins Historical Society, November 8, 1896, by Hugh H. Young, [12] entitled "Long, the Discoverer of Ether Anesthesia—A Presentation of his Original Documents." He gives the facts of the whole situation, with descriptions of the famous "ether inhalation parties," the history of the first case anesthetized by Long, and the documents pertaining to the unpleasant controversy.

CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

XANTHOMA DIABETICORUM

CASE REPORT

By F. H. Stibbens, M. D.
Oakland

XANTHOMA diabeticorum is an exceedingly rare skin condition, first described by Addison and Gull in 1851. The great majority of the reported cases since that time have occurred in glycosuric individuals. The disease does occasionally occur in individuals in whom glycosuria is absent, however. Ninety per cent of all reported cases have appeared in males between the ages of 21 and 57 years. Politzer, however, reported the condition in a boy of 17.

The lesions usually occur over the buttocks, knees, and elbows; as rather thick, hard, yellowish papules and plaques, varying in size from a small shot to that of a pea or larger, superimposed upon a reddish base. These lesions may be tender or even painful, and the sensations of burning or itching may be absent or very marked. Resolution usually occurs spontaneously without leaving any change in the skin texture, and takes place in many cases without any relation to the amount of sugar present in the urine.

Goldstein and Harris reported a case in 1927 in which three types of resolution occurred simultaneously, with little or no reference to the general condition of the patient. Some of the lesions disappeared, leaving no change in the skin structure; some left marked pigmentation; and some marked and destructive scarring.

Anatomically the xanthoma nodules are very similar to those of xanthoma multiplex, except that there is much more evidence of an active and inflammatory process and less of connective tissue increase.

CASE REPORT

On October 6, 1926, Q. K. T., a Chinese butcher, weighing 230 pounds, presented himself, complaining of having gradually developed a number of raised, hard nodules and papules in his skin during the preceding year. These had not been red nor had they caused him any discomfort; but he had not liked their appearance and had become alarmed because they were becoming more numerous and because the individual lesions had gradually enlarged.

He was married and had two children, one of whom, a girl of three years, was suffering from infantile eczema. The family history was otherwise negative.

He had always been well and strong, having had no physical ills other than moderately frequent attacks of headache. He was a large eater and drank rather large quantities of tea. Was very fond of rice and sugar, never stinting himself in the use of either. He had not noticed any polyuria.

Examination of the skin showed some eighteen or twenty ocher-colored papules scattered over his arms, palms, thighs, soles, and trunk, without any apparent predilection for any one part.

Several of the diseased areas were from one-half to three-fourths inches in diameter, the papules being arranged in distinct circles about a clear, slightly bluish center. None of the papules, even those appearing singly, showed any redness about the base. They were all very hard and shot-like, not tender or painful, and were freely movable upon the subcutaneous tissues. The isolated papules varied in size from that of a small shot to nearly one-fourth inch in diameter.

The urine had a specific gravity of 1030 and gave a very marked reaction for sugar with the Fehling test.

He was advised to give up the use of sugar and rice and to substitute saccharin and diabetic bread. In addition to the diet regulation he was given 1 cc. of Iletin (Lilly) hypodermatically, three times a week.

At the end of six weeks all of the papules and circles had disappeared, only a light pigmentation and a slight atrophy of the skin remaining at the site of each lesion. This pigmentation and atrophy has remained to the present date.

The sugar in the urine disappeared within one week after treatment was instituted, and by the end of the sixth week he had lost some thirty-five or forty pounds in weight. At that time he stated that he felt better than he had been for a long time and that he had no more headaches.

Since the disappearance of the lesions he has reported only at long intervals and says that he has gradually resumed the eating of rice and bread in small amounts and that he has had no recurrence of his headaches. No glycosuria has returned, except at times when he overindulges in carbohydrates. No new skin lesions have appeared during the past year.

COMMENT

The striking features of this case were:

1. The absence of redness at the base of the lesions;
2. The occurrence of lesions on the palms and soles;
3. The occurrence of circles of papules about a bluish center; and
4. The persistence of slight pigmentation with a slightly atrophic condition at the site of former lesions.

830 Oakland Bank Building.

ACUTE ANGIONEUROTIC EDEMA OF THE LARYNX

CASE REPORT

By Benjamin Katz, M. D.
Los Angeles

ACUTE angioneurotic edema of the larynx is a rare but very dangerous complication, resulting many times in the death of the patient. No way of foreseeing or preventing such edema is known. The literature is very scarce and the subject is known very little to the general practitioner or to the specialist. Further data are greatly needed. The writer therefore believes it worth while to report a case which occurred recently in his practice and to discuss, briefly, the literature.

CLINICAL DESCRIPTION

The best clinical definition of this affection can be expressed by the words of C. Theisen.[1] "The writer has always believed that the type of laryngeal edema is frequently neurotic when it comes apparently out of a 'clear sky' and develops so rapidly that alarming difficulty in breathing comes on almost at once, without a definite preliminary infection somewhere in the throat, as an etiologic factor. There is rarely any temperature. The patient is perfectly well and in fifteen or twenty minutes is struggling for air. There have been a number of cases of sudden death in this form of neurotic or angioneurotic edema reported."

H. Fisher of Breslau,[2] a physician to the courts, demonstrated twenty original specimens of the

larynx collected by himself, where sudden death due to edema of the glottis had occurred, and discussed the medico-legal aspect of this disease, because a suspicion of poisoning or trauma inflicted by another person in these extremely sudden deaths is liable to follow.

ETIOLOGY AND REVIEW OF CASE REPORTS

The writer has analyzed the available case reports to determine to what conditions this complication has been ascribed.

Staffleri [3] considers inherited nervous conditions an important etiological factor, a result of exaggerated excitability of certain nerves controlling the circulation of lymph. The cause of the nervous hyperexcitability, according to this author, is defective endocrine function with thyroid insufficiency predominating. Osler points to the same cause and reports a family in which, in the course of five generations, nineteen members out of a total of thirty-nine had angioneurotic edema, two dying of edema of the larynx. He states that edema may be induced by some toxin in the intestinal tract, and in a certain percentage of cases the larynx is the first part to be involved.

Gastric disturbances are cited as the etiologic cause by some authors. F. Simon reported a case of edema of the larynx which developed after the patient ate fish. V. Schrotter [4] mentions a case in which a patient with a chronic intestinal catarrh likewise developed edema of the larynx and died.

Edema of the larynx has followed tonsillectomy. D. Husik [5] reports a case in which tonsillectomy under general anesthesia in the University Hospital, Philadelphia, was followed by a slowly progressive edema toward the evening of the next day. After midnight a tracheotomy was necessitated. The patient recovered gradually. When edema develops rapidly the patient presents signs of a general collapse in a few minutes. Even when a correct diagnosis is made there is not always time to perform a tracheotomy. In the *Kentucky Medical Journal* Tuley reports a case in which death occurred within fifteen minutes, while preparations for a tracheotomy were being made. C. Theisen suggests that some cases of sudden death may have been due to localized cerebral edemas involving the respiratory or cardiac centers.

Three cases reported by F. Kennedy [6] of brain swelling in angioneurotic edema support this opinion. Protein sensitization test in one proved the patient to be susceptible to milk. P. Bassoe, discussing Drysdale's [7] paper about acute edemas, reported a case in which a brain tumor was suspected and decompressive operation performed. The subsequent history of the case, however, proved that the condition was angioneurotic edema, many attacks having occurred over a period of twelve years on different parts of the body. Finally some badly abscessed teeth were removed and, according to G. Hall, the patient recovered completely. Bassoe admitted that this was a case in which apparently the brain had been first affected.

While some authors think that food protein sensitization is the etiologic basis for certain cases, the symptoms being interpreted as anaphylactic disturbance, others believe that the outstanding cause is sensitization to bacterial rather than to food proteins, as a result of focal infection. H. Barber [8] has observed cases in which the edema completely subsided after extraction of septic roots, treatment of pyorrhea, eradication of sinus infection, and enucleation of tonsils. Oberndorf [9] reported a case of angioneurotic edema which entirely disappeared after an acutely inflamed appendix had been removed.

In some cases the etiology of the edema of the larynx is entirely obscure. For instance, W. Freudenthal [2] reports three cases of sudden edema of the larynx with one death in women after childbirth. Previous examination had not revealed any abnormality in these patients.

Rethi reports a case in which angioneurotic edema of the larynx occurred twice during menstruation.

Malnutrition apparently is sometimes a causative factor in edemas, as shown by His, of Berlin, who reports on cases studied by him during the last war; these cases improved when fat was added to the diet.

CASE REPORT

Mr. B., 38 years old, came to my office April 26, 1927, and gave a history of having been in the Pasadena Hospital for twenty-five days, where a diagnosis of ulcer of duodenum, chronic appendicitis, chronic tonsillitis, chronic mitral endocarditis (well compensated) and gastric hyperacidity had been made and a tonsillectomy advised.

The operation was performed next day at my office under local anesthesia, the patient being under my personal care for about an hour and a half following the operation and feeling well. Then he was left under the care of a nurse, and was all right for another three-quarters of an hour, when he complained of not feeling well. The nurse took his pulse—it was 80. The patient was made comfortable in bed, gave a sign that he was better, but in a few minutes complained again. He was asked if he was nervous, and instructed, as is usual after tonsillectomies, to write the answer. He wrote: "I am not nervous, but can't breathe. O my . . ." and fainted. His head was bent down, the feet lifted, 1 cc. of adrenalin chlor. 1:1000 injected, and a physician called who arrived in two or three minutes. He found the patient with a very weak pulse and unconscious, again injected 1 cc. of adrenalin and started artificial respiration. At this time I returned and, interpreting ex consilio the condition of the patient as a collapse, adrenalin was injected into the heart and artificial respiration continued. A pulmotor was sent for and arrived in ten or twelve minutes. After the pulmotor was in action about fifteen minutes I decided to examine the patient's throat to determine if there were any bleeding from the tonsils. I opened the patient's mouth, removed the air tube inserted by the fireman and the packing from the fossae, and found no bleeding. The pulmotor was again started and artificial respiration kept up for a certain time, but all efforts to revive the patient failed.

Autopsy findings (Dr. A. F. Wagner): Stomach, intestines, kidneys, heart—negative. Lungs: congestion. Spleen enlarged. Thymus gland enlarged, not subinvoluted. Larynx: edema of the epiglottis and of the larynx upon and about the vocal cords. Not any sign of inflammation in the larynx nor any blood in the stomach.

Verdict of coroner's jury as to the cause of death: "Strangulation following edema of the epiglottis and of the larynx, following operation for removal of tonsils performed by Dr. Benjamin Katz. We believe

that Dr. Benjamin Katz rendered medical aid to the best of his ability."

From an etiologic point of view the writer's case closely resembles Schrotter's and Husik's cases, namely, the patient having a chronic catarrh of the intestines associated with an enlarged thymus and spleen (status lymphaticus) developed about two hours after tonsillectomy, an acute fatal edema of the larynx.

PATHOLOGY

Hajek experimentally demonstrated by injection of liquids into the larynx of a cadaver that edema spreads according to certain laws. The great vascularity of the larynx, together with the fact that the blood vessels of the mucous membrane are practically unsupported, permits rapid congestion, and there is a leakage into the perivascular tissue. The exuded serum fills the intercellular spaces and lymph channels, giving them an appearance of a semitransparent swelling. There is no inflammation present. According to several case reports proven clinically and microscopically, the edema of the larynx can be accompanied by simultaneous edema of the brain, probably involving the respiratory and cardiac centers.

DIAGNOSIS

Presence of a semitransparent swelling in the larynx without any inflammatory condition, accompanied by signs of difficulty in breathing, makes the diagnosis possible when the progress of the edema is slow. In rapidly developing cases of edema the symptoms of general collapse prevail, the edema being detected only after death.

TREATMENT

C. Theisen, who had a few cases of edema of the larynx under his observation, recommends a cold spray of adrenalin 1 : 5000 and an ice coil around the neck. When difficulty in breathing develops, incisions with the Schrotter-guarded laryngeal knife or a tracheotomy is indicated. It is worth while to mention that in rapidly progressing edema of the larynx the patient may die before a tracheotomy can be performed, or even when a tracheotomy has been done, if edema involves the brain.

SUMMARY

Acute angioneurotic edema of the larynx is a rare but very dangerous complication, which, in our present knowledge, can neither be foreseen nor prevented. Its etiology is obscure. In recorded cases inherited nervous conditions, gastric disturbances, focal infection, endocrine disorders, malnutrition, and anaphylactic disturbances have been noted. The treatment indicated often fails because of the rapidity of involvement or because of edema of the brain. The literature of the subject is very scanty. Therefore all cases should be reported in order that further data may be collected for study.

520 West Seventh Street.

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A NEW GLASS DRAINAGE TUBE FOR SUPRAPUBIC PROSTATECTOMY

By L. Lore Riggin
Pasadena

Drawing, to scale, of a glass drainage tube for use in suprapubic prostatectomy cases. The drawing is self-explanatory.

Advantages claimed over the Freyer tube are:

1. By the two "arm" outflow, the patient may lie on either side without disturbing the drainage.

2. The two "arm" supports on the dressings, make a more comfortable dressing for the patient.

3. By the "through-and-through" opening of the large tube, obstructing clots may be attacked by alligator forceps and be removed.

4. Through this same avenue the catheter may be passed when doing the postoperative irrigations of the bladder.

5. Free exit of urine and irrigating solutions is possible without soiling the dressings, and without causing tension on the bladder walls, and without changing position of the patient.

6. Much easier postoperative care of the bladder with the least discomfort to the patient.

The large upper opening is kept closed with a rubber stopper when not used; each side "arm" has a length of soft rubber tubing attached, with a glass connection on the distal end for making connection with the tubing leading to the reservoir (connection being made with the dependent one).

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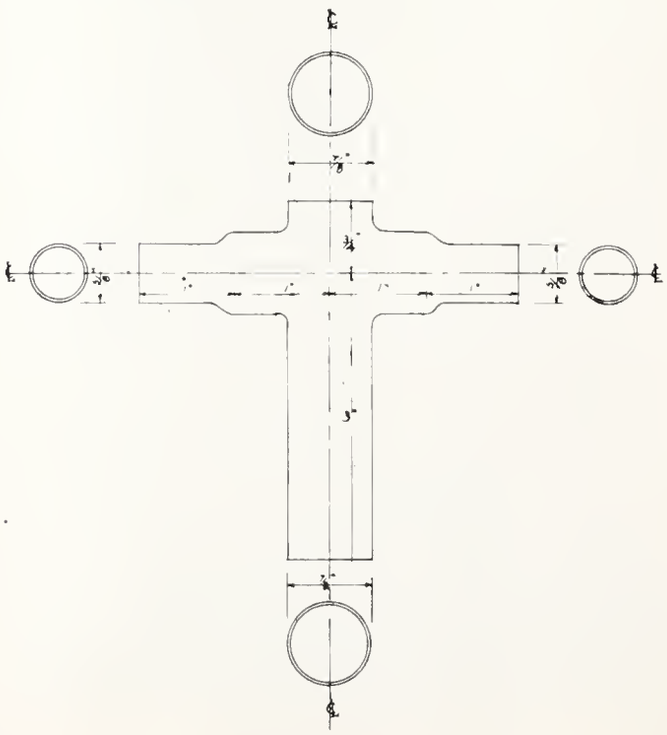

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

THE RELATION OF THE DUCTLESS GLANDS TO THE PSYCHOSES

Eva Charlotte Reid, San Francisco—In recent years psychiatrists have been eagerly following the developments of endocrinology, hoping that a ray of light might be shed upon the etiology of the psychoses and a scientific line of treatment evolved. So far they appear to have been following a will-o'-the-wisp. Years ago Doctor Southard of Boston predicted "The time is coming when there will be no psychologists and psychiatrists left. The endocrinologist will eliminate us all. He will take all the cases of mental disease, explain them on the basis of misbehaving ductless glands and cure them all." While this golden era seems as yet far distant, endocrinology appears to offer the most reasonable explanation of the psychoses other than those produced by toxins and those associated with organic brain disease.

Anyone who has made routine examinations in a large hospital for mental cases cannot but be struck by the frequency with which evidences of endocrinopathies appear,—pseudohermaphroditism, infantile sex organs, menstrual irregularities, adiposities, faulty skeletal development, gigantism, absence and irregularity of teeth, and abnormal hair distribution. After years of observation one learns to expect a less hopeful prognosis in cases where these anomalies are most marked. In every state hospital the "residue which remains" is composed largely of these anomalous individuals. It was doubtless the prominence of these defects especially in dementia praecox that form seventy-five per cent of these cases, which led Adler to formulate his theory of organ inferiority, namely that a badly constructed body expresses itself at the psychological level in defects of adjustment and peculiarities of conduct. In other words, the abnormal conduct is a manifestation of an attempt by the individual to compensate for organ inferiority. Others believe that the trouble is primarily a psychological condition induced by faulty training and environment, and that the mental regression reacts upon the physical organism. It is more reasonable to suppose that both the organic and psychological are manifestations of an inherent development anomaly.

For the past ten years Mott of London has been carrying on pathological investigations on the ductless glands of mental cases. He claims to have discovered changes in the gonads, pituitary and adrenal glands which appear to be pathognomic of dementia praecox. Other investigators, with the exception of Lewin of Washington, D. C., have been unable to confirm these findings. In the November number of the *American Journal of Psychiatry*, Lewin reports in detail the result of the investigation of the ductless glands of a series of cases at the New York State Psychiatric Institute. His conclusions are as follows:

"We would like to emphasize that we do not mean to assert the absence of any possible relation between endocrine organs and psychoses in those groups such as dementia praecox where our findings were essentially negative. We do, however, feel that there is no evidence in our material of such anatomic psychiatric correlation, and for the dementia praecox groups in particular, we believe that our material was quite comparable to the material on which several, in our opinion, untenable hypotheses have been based."

Chemical investigation and therapeutic research have been equally barren of results. While the outlook is far from hopeful, it must be remembered that modern psychiatry and endocrinology are both in their infancy, having been born, one might say, in the present century, and there is a great unexplored field for future research in their respective fields and in their relation to one another.

* * *

Leo L. Stanley, San Rafael—One cannot go through the wards of an insane asylum and see the patients without being struck by evident manifestations of diseases of the ductless glands.

The hyperexcitability, restlessness and apprehension displayed by the thyrotoxic, and the sluggishness, mental depression, languor, and lack of initiative by the strumiprivous cannot be mistaken.

The physical characteristics are striking; thin, gaunt, exophthalmic on the one hand; fat, heavy, myxedematous on the other.

It cannot be doubted that the gonads of both sexes play an important part in the mental makeup of the individual.

The insanities of adolescence are familiar. At this period of life the biological urge for mating and perpetuation of the race is at its highest. Our religions and code of morals forbid normal exercise of these passions. Very grave and serious conflicts arise in the maturing mind. Some of the weaker go under as a result of this strain. It is held that more patients become insane from suppression of sexual function than from overindulgence. All medical men have had in their experiences cases of insanities of pregnancy, as well as having seen the numerous vagaries of appetite and action while the mother was carrying her unborn child.

Then, too, there are the disturbances of the menopause when the ovaries have laid aside their

activity, the hot flushes, the headaches, the mental peculiarities to greater or less degree.

The insanities of the fourth decade are not uncommon. It is recognized by many that the female shows mental aberrations about the time of her menstruation. Evidently the action of the ovaries plays an important part in these.

In the male, masturbation is one of the frequent accompaniments of insanity. This may denote a hyperactivity of the testes. An attempt has been made to associate dementia praecox with the size and weight of the gonads.

In the numerous lewd and lascivious acts committed by old men, the function of the testes of these individuals has practically ceased. Sexual memories are, however, still retained and perverted acts are committed to appease a memory of sex experience of youthful days.

It is recognized that insanities are caused by toxins such as those produced by alcohol, by syphilis, beri-beri, and other similar agencies.

Temporary insanities are caused by the poisoning of the fevers, as typhoid, pneumonia and others.

May not the whole subject of insanity then be considered as a disease due to abnormal chemical bodies bathing the brain cells and vitiating and disturbing their normal functions? Many of these deleterious products may come from one ductless gland or from several of them, and these products may be produced by an overactivity, an underactivity or a perverted activity of the gland or glands.

The great burden which the insane, the degenerate and the criminal imposes upon the state, warrants the greatest efforts in research toward finding the relation of ductless glands to the psychoses.

* * *

Donald Raymond Smith, Talmage—A relationship between psychoses and the ductless glands has never been demonstrated up to this time. Some work has been done along this line, the result of which seems to indicate that there was some relationship between abnormal mental functioning and abnormal functioning of one of these glands. Other investigators along the same line of research, come forward with the statement that they are unable to demonstrate any relationship between disordered functioning of the ductless glands and the psychoses.

It has been known for some time that one cannot demonstrate pathological lesions in any of the ductless glands as associated with any definite type of psychosis. Newer methods of examination, and by the same methods, a demonstration of lesions not now possible may in the future develop some relation between mental and glandular defect. Further assistance in the understanding of mental diseases may come from chemical research in connection with the ductless glands but so far investigation carried out along this line has failed to show any definite relationship existing, but failure of the past in this, however, should not curtail this work in the future because newer methods of examination, and a better understanding of biochemical relations existing within the human body may establish more definitely causes and effects.

This work, however, must be done by those equipped along this highly specialized field, working in connection with a clinician who is able to furnish the nature and the history of the psychosis.

* * *

Anita M. Muhl, San Diego—Much has been written about the rôle of the endocrines in producing psychoses and lesser abnormal mental states, but the reverse reaction has not been discussed so frequently. That a dysfunction of the thyroid and the pituitary can produce pathological mental symptoms, we know, but we also know (though we do not pay so much attention to this) that chronic emotional and mental reactions of the destructive type can produce disturbances of the glands of internal secretion.

It has been demonstrated that removal of the thyroid gland in cases where there have been concomitant mental symptoms has cleared up the psychotic and psychoneurotic disturbances, but on the other hand, *removal of the untoward emotional* state has cleared up many a case of hyperthyroidism.

One amusing case comes to mind. A very famous eastern surgeon sent a young woman suffering with extreme hyperthyroidism to a psychiatrist with a request to please get rid of the patient's worries and fears so the operation could be performed. The psychiatrist, who was a most able psychoanalyst, succeeded so well that when the patient went back to the surgeon she was not only minus her fears and worries, but minus her toxic goitre as well!

This interrelationship of the endocrines and the emotions, together with the rôle played by the vegetative nervous system in the interreaction can no longer be ignored by the thinking medical profession. If our endocrines are out of order we suffer physically and emotionally; if our emotions are chronically upset we are bound to suffer not only mentally, but through endocrine disturbances, physically as well.

Marked endocrine dysfunctions are not so apt to produce psychoses in individuals who are not predisposed; (by predisposed, meaning individuals who are suffering with mental conflict). There are many cases of severe endocrine disturbance with no psychotic symptoms just as there are many cases of psychoses with apparently no endocrine change.

If we but try to understand the patient as a whole—not as a case of psychosis, or a case of hyperthyroidism or hyperpituitarism; nor yet as a case of hyperacidity or cardio-vascular-renal disturbance, but as an individual who has an illness which is but a manifestation of the disturbed equilibrium of the entire system (physical, biochemical and mental), then perhaps we will begin to realize the importance of the endocrine disorder in producing emotional disturbances and of the equal importance of disturbed emotions in producing endocrine disorders.

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EDITORIALS

THE ADDRESS OF PRESIDENT PHILLIPS

Dr. Percy T. Phillips' presidential address to the California Medical Association, printed in this issue, presents to the consideration of our members the important subject of narcotics. He pertinently states that this is primarily a subject with which the medical profession has to deal, even though the legislative and executive arms of our state and national governments must so often come into action to force out the blessings of narcotics from becoming curses.

As president of the California Board of Medical Examiners, Doctor Phillips has had an unusually broad experience with the workings of antinarcotic statutes, and his viewpoints and conclusions are therefore of more than average value.

His contribution on this important subject is worthy of perusal and thought by members of the medical and legal professions, and by all laymen who have at heart the welfare of the state and of its citizens.

Doctor Phillips in this paper has performed a real service for the state of California, and one that should make for better things in the days to come.

MAKING SURGEONS—NOT THROUGH TRAINING, BUT BY LEGISLATION!

Two proposed legislative measures, one federal, the other state would seem to justify a caption such as heads these comments.

The first or federal measure is a proposed bill introduced into Congress by United States Senator Royal Copeland of New York, and having as its presumable major purpose the passage of a medical practice act for the District of Columbia. From the criticisms which have been placed thereon by the authorities of the American Medical Association it is evidently a loosely drawn measure that will lead to trouble without end; not only for the medical profession and the lay citizens of the District, but also to organized medicine and to lay citizens of the different states of the Union.

* * *

After the many years of experience with medical practice acts throughout the United States, it seems strange that a bill should be proposed for consideration by the Congress of the United States that has so many defects as seemingly exist in this measure.

The outstanding public health menace which the proposed law contains may be said to be that clause which is so drawn, either through omission or commission, that its provisions are not limited to the geographical domain of the District of Columbia. Consequently there is a possibility of its being interpreted by the courts as having the force of a law applicable not only to governmental agencies in that District, but to all other domains of the United States, on land or on sea.

In this clause it is stated that "the degrees doctor of medicine and doctor of osteopathy shall be accorded the same rights and privileges under governmental regulations."

In other words, the present governmental regulations regarding previous professional education and training, now applicable to the medical corps of the United States Army, Navy, and Public Health services, would all be waived. Under such conditions osteopaths of lesser training would be eligible to all positions and emoluments in those public services. Or to put it otherwise, a cultist practitioner of the healing art, with little or no special training in surgery, becomes eligible to hold a position as a surgeon in these services, and to be started on his career of advancement by the seniority rules of these services. If this is not making surgeons by legislation, what is it?

* * *

Let us turn now from the Congress of the United States and its ward, the District of Columbia, to the great state of California. Here we can make note of what a proposed initiative, to be voted on in the state election of November of this year 1928, proposes to enact. This initiative would confer by legislation, privileges somewhat analogous to those in the proposed federal bill just considered.

This California measure here referred to is an initiative sponsored by the practitioners of the healing art who are known as chiropractors. The chiropractors, through one initiative now on the California law books, and which received the sanction of the people of California several years ago, divorced themselves from the state medical examining board. With their own board, in this brief

period they have already licensed in California more than 2300 members to practice their methods of diagnosis and healing.

* * *

If the plans of this proposed chiropractic initiative are carried out according to the digest that has come to our attention, it will provide in Section 15d that "Licentiates under this act shall not be discriminated against in favor of other classes of practitioners in the handling of any matters pertaining to the public health."

* * *

So here again by initiative act, a group of practitioners whose standards of education are now far below that of nonsectarian practitioners, and which only a few years ago were much more so, would presumably come into possession of full rights and privileges to all public health powers and positions in California. At present such powers and positions are limited to those practitioners of the healing art duly licensed by the state as possessing credentials indicative of adequate preliminary education and professional training.

In this proposed initiative these chiropractor practitioners have the temerity to ask the people of the state to grant them through law these grave privileges and responsibilities which, it stands to reason, can only be safely acquired through proper preliminary education and adequate professional training. Other sections in the bill of similar nature would be equally detrimental to proper educational and professional standards as we understand those standards.

* * *

This chiropractor initiative would certainly seem to partake of the nature of class legislation, since it gives privileges which other laws grant to other citizens only under vastly more stringent exactions. Yet, if the initiative is favorably voted upon by the citizens of California, it is a question whether it would not be construed by the courts to be constitutional.

* * *

This initiative is one of the proposed laws which the officers of the state association and its component county units should closely watch. If when the initiative is distributed for signatures it is found that its provisions turn out to be as lax and as inimical to the public health interests of California, as we are led to believe they are, then the California Medical Association and its component county societies must decide whether or not they will remain passive or active while the agitation for its passage goes on. It it should be desirable that we should oppose the measure, then ways and means must be devised, so that the voters of California may be adequately informed of the effects which such a law would have on public health standards. To do less than that would be to disregard our responsibilities and obligations to be militant on all matters that make for an adequate protection of the public health.

EXCESSIVE FUNERAL COSTS

Recent investigations of burial costs of human beings in the United States seem to indicate that the statement which is occasionally heard, that it would seem to be cheaper to die than to live, must be reconsidered.

A somewhat painstaking survey of funeral costs in America has shown that burial expenses nowadays, in common with other expenses (not excepting in instances the cost of medical and surgical care) are tending to reach figures either excessive or quite out of proportion to the financial means of a considerable number of citizens.

The survey referred to was conducted under the supervision of a committee of some fifty citizens of the United States, and was made possible in good part through an appropriation of $25,000 from the Metropolitan Life Insurance Company. The committee had on its roster, well-known representatives of the medical, legal, ministerial, and journalistic professions, as well as social service workers and funeral directors. California was represented by Dr. Ray Lyman Wilbur of Stanford. The director of the survey was John C. Gebhart, who in addition to the booklet giving a summary of the committee's investigations, will later bring off a more detailed report from the press of the G. P. Putnams Sons of New York.

* * *

The conclusions drawn were based largely on an analysis of some 15,000 funeral bills representing different economic groups from various sections of the United States.

Among some of the interesting facts which were established through the survey may be cited the following:

The average costs of funerals for all classes of population were: in Chicago, $460; in New York, $772.

The average costs of funerals for all classes of population in different states were: North Caroline, $190 (this was the lowest average); New Jersey, $484; for all states represented, $363.

The average costs of funerals for all classes of population, for communities of different size, were: for cities under 10,000 population, $241; for cities between 10,000 and 250,000 population, $270; for cities over 250,000 population, $336. The average cost of funeral expenses in eastern cities was somewhat higher than that of western cities.

The average costs of funerals for certain races were: for the Irish, $452; for the Italians, $421; for the orthodox Jews, $247.

The cost in New York for single graves ran from $40 to $140; for family burial plots from $200 to $10,000.

The average wholesale cost of burial merchandise per funeral in the year 1889 was $10.11; by 1925 this figure had risen to $51.89.

In estates having less than $1000 it was found for New York City that the burial costs absorbed about 52 per cent of whatever constituted such

estates; whereas in estates of over $100,000 less than 1 per cent of such estates was absorbed by funeral expenses.

London with over 7,000,000 population has some 800 undertakers; New York with some 6,000,000 population has 2000 undertakers.

In the United States, since 1920, there has been a 51 per cent increase in the number of funeral directors; this figure representing for the undertakers an increase twenty times more than the increase in the number of deaths in that period.

The average number of funerals per year for each undertaker was about fifty-six funerals.

* * *

The figures just given should be of interest to all of us, even though most of us dislike to discuss the kind of funeral we desire for ourselves, just as many of us dislike to make wills; on the presumption, possibly, that while other human beings die, we shall go on living for years to come. However, some of the reluctance to talk of these things may be partly dependent on what might be called a superstitious feeling to which most of us must acknowledge, that a discussion of our own death may be bad luck that could tend to hasten our deaths.

Be these things as they may, we must acknowledge that it is a great misfortune that in the family groups of our industrial workers of estates of $1000 and less, some 52 per cent of such estates should be absorbed by funeral expenses.

* * *

These high costs of burials are reflected in Europe, but the nations of that continent some years ago recognized the necessity of intervention in these matters, as witness the following:

Switzerland led the way in establishing communal burial service, and its cities, since 1890, in municipally owned cemeteries, give free burial service along simple lines for rich and poor alike.

Some German and Italian cities offer different grades of communal funeral service; prices for such in Munich ranging from $15 to $175.

French cities can offer communal burial service direct, or types of funerals through a concessionaire, as many as eight grades of such funeral service being offered.

* * *

Funeral customs in the United States have changed considerably in recent years. The undertaker is now often known as a funeral director or a mortician. When death comes into a home the body of the deceased member of the family is promptly taken to a funeral chapel or parlor. Some of these establishments in their embalming and preparation rooms surround themselves with many of the accessories of modern hospital operating rooms. Then there are rest or meditation or quiet rooms, where the body reposes until taken into the chapel for the final services.

It stands to reason that all these newer procedures, with their increased overhead, necessitate increased expense and make for higher costs in burial service.

It cannot be denied, however, that in the hour of sorrow when death enters a household all sense of application of trade principles to learn whether the burial costs proposed by a funeral director are legitimate is usually forgotten, for fear that such investigation might be construed as disrespect to the memory of the deceased relative. It is unfortunate that this striving to show respect to a dead member of the family, no matter at what cost, finds in one sense more intense expression among those of slender economic resources than among the well-to-do.

It is gratifying to know that the need of reform has been recognized on their own account by funeral directors, and that a group of the better known members have formed an association that is working for results which this survey has called attention to as being desirable.

* * *

In the medical profession we have members who at times charge fees so excessive in proportion to the means of the family units receiving the services, or so out of proportion to the general average of fees of fellow practitioners of equal ability and reputation, that they bring our entire fraternity into disrepute in the eyes of all lay citizens who hear of such practices. On that account we are not in position to criticize the undertakers too severely.

On the other hand, as physicians we officiate in the last illnesses of the great majority of our lay fellows to whom death in due time comes. Those professional services, faithfully and generously rendered, are only too often not paid for, because the family group, being led to spend so much more than it should for the funeral arrangements, has practically no money to pay the physician the fees which he faithfully earned.

Therefore, as a general study in sociology having a somewhat close relation to our profession, and as a special study in medical economics, the whole subject of funeral costs should be of considerable interest to physicians. That is why the subject is here discussed.

A Government Hospital for New England—A million dollars for a new hospital for veterans to be located in southern New England has been approved by the Committee on World War Veterans' Legislation of the House of Representatives, as has also $300,000 for the existing hospital at Bedford, Massachusetts. These sums are part of a $15,000,000 program which was to be embodied in a bill prepared by Congresswoman Edith N. Rogers of Massachusetts, who is now chairman of the subcommittee on hospitalization. There will be another new hospital in Kentucky, also costing a million dollars.—*New England J. Med.*

When Infantile Paralysis Is Epidemic—Dr. Charles H. Mayo says that it is futile to attempt to run away from infantile paralysis after the epidemic begins, because recent experiments have shown that at such a time the germs of the disease exist in the throats of almost all children and of many adults, most of whom never show any signs of the sickness. "The best thing to do," he says, "is to remain at home, guard the children against overfatigue and indiscretions of diet, give them a little extra rest during the day, and watch their temperature."—*U. S. Department of Labor.*

MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Metabolism

Vascular Hypertension: A Significant Contribution to Its Pathogenesis—Clinicians welcome all notable contributions to the study of vascular hypertension because this condition is encountered so frequently, and its management presents one of the most unsatisfactory and difficult problems of cardiovascular disease. Despite the vast number of investigations directed to determine the underlying cause or causes of hypertensive cardiovascular disease, it cannot be said that its etiology has been discovered, although many factors such as mental and physical strain, infection, and metabolic and endocrine disturbances are believed to be contributory factors of this vascular reaction. Now, just at a time when it appeared that all fundamental anatomic-pathologic studies of this condition were exhausted, there is submitted by two Baltimore workers an investigation along these lines which promises to add definitely to our knowledge of hypertension.

Bordley and Baker [1] began their study with the premises contained in "Cushing's law," *i. e.*, "that an increase of the intracranial tension occasions a rise in the blood pressure which tends to find a level slightly above that of the pressure exerted against the medulla." Cushing felt that this increase in blood pressure was brought about by the vasomotor center in an effort to prevent anemia of the medulla oblongata; that it was, in other words, an expression of urgent necessity for the preservation of the medullary centers. The English physiologist, Starling,[2 3] recently published some important experimental work suggesting that vascular lesions in the medulla, which would impair the blood supply, could produce a compensatory rise of blood pressure and, further, that the causation of hyperpiesia must first be sought in the vasomotor center.

The Baltimore workers above mentioned set out with the idea that it might be possible to explain the more or less chronic states of arterial hypertension so frequently associated with arteriosclerotic changes upon the basis of a localization of these changes in the region of the vasomotor center. Such changes could readily account for a reduction of the blood supply to this center, and lead to a compensatory increase in the arterial tension comparable to that which Starling had produced experimentally in dogs.

The material studied consisted of two groups of cases that had come to autopsy in the pathological department of the Johns Hopkins University, each with a relatively equal amount of arteriosclerosis. The first group had presented clinically a definitely elevated level of blood pressure as observed over a considerable period of time, whereas the second group presented in their clinical course normal or low blood pressure. The anatomic conditions in the vessels supplying the vasomotor center was then compared in the two groups. For this study the location of the vasomotor center was assumed to lie between the obex and the middle on the pons. The two groups comprised twenty-four cases, which were studied carefully both by the gross and the microscopic methods. Of these, fourteen belonged to the first or hypertension group, and ten to the second or normal, or low blood pressure group. The results of this anatomic study brought out the significant fact that arteriolar changes within the medulla, although found constantly among the hypertension cases, are completely lacking among the cases with normal blood pressure. As a rule the larger arterioles are more likely to show intimal and the smaller ones medial changes.

This establishment of a constant association between structural changes in the arterioles supplying the medulla oblongata and persistent states of arterial hypertension has important significance and has not been demonstrated previously. The present writers, however, were not the first to call attention to the frequency with which arteriolar changes within the cranial cavity are associated with high blood pressure. Gull and Sutton, more than fifty years ago, described arteriolar pial changes in chronic Bright's disease and coined the term by which this process in the tiny arteries has since been known, namely, "arteriocapillary fibrosis." In 1924 O'Hare and Walker, approaching the study of hypertension from the clinical side, emphasized two groups of arteriosclerotic patients, the first showing retinal sclerosis and high blood pressure, and the second, with no retinal sclerosis and no increase in the blood pressure.

The Baltimore investigators recognize that there are some very definite objections to their views. The most obvious objection promptly comes to mind. Could it not be said that arteriolar changes are the result of a compensatory reaction due to the strain of a persistently increased pressure? The controversy as to whether arteriosclerosis is a primary or secondary phenomenon in chronic hypertensive conditions seems to be an endless one, and now after many years of investigation still remains unsettled. Therefore this objection cannot possibly be refuted. Another objection suggests the possibility that the changes observed in the brain may be only a part of a generalized arteriosclerosis which itself would be capable of raising the blood pressure. Their answer to this

is, that there is no evidence that arteriosclerosis is ever, except in the rarest instances, a generalized process. It is maintained that arteriosclerosis in most cases of persistent hypertension is not a widespread process but rather appears to exhibit a predilection for certain organs, while others are left relatively or totally uninvolved. In all the cases which were found to exhibit sustained hypertension, variable degrees of arteriosclerosis of the kidneys were found, as well as arteriosclerosis of the medulla. Therefore, if hypertension is to be ascribed to the mechanical interference or arteriolar constriction, the vascular changes in the brain, and in most cases the kidney, must constitute, at least to a great extent, the adequate obstruction.

In concluding, it is stated that the investigation has not contributed anything to the etiology of the disease, but merely offers an anatomic explanation, supported by experimental facts, for the persistent elevation of blood pressure.

The appendix presents the detailed protocols, including the clinical histories and an epitome of the salient gross and microscopic autopsy findings, of the twenty-four cases on which the work is based.

A careful study of this paper leaves one with the impression that something concrete has been added to our knowledge of hypertension in that a correlation between clinical hypertension and arteriosclerosis of the medullary vessels is regularly shown to exist, whereas arteriosclerotic cases with normal blood pressure fail to reveal marked anatomic vascular alterations in the medulla. To my knowledge, this point has never been demonstrated before, and it may lead to a further elucidation of this complex problem.

Ernest S. du Bray, San Francisco.

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Dermatology

Eczema and Disturbed Carbohydrate Metabolism—Considerable attention has been focused recently on the association between certain cases of eczema and a disturbed carbohydrate metabolism. More and more eczema is coming to be regarded as a symptom rather than a disease entity—a symptom due to a variety of possible causes. There is just as much evidence to show that some cases of eczema are due to an intolerance to sugar, as that certain other cases are due to protein sensitization, and others to external irritating agents.

A number of investigators have definitely established the fact that hyperglycemia occurs in patients with eczema more frequently than in normal individuals. Usher and Rabinowitch [1] have attacked the problem from a new angle, by studying the amount and the rate of sugar elimination in the sweat of normal individuals as compared with patients having eczema. The sweat was collected by placing the patient between rubber sheets. Sweating was induced by hot water bottles, blankets, and the subcutaneous administration of pilocarpin.

Glucose was found to be a normal constituent of sweat. In six normal persons, in a test lasting one hour, an average of 18 mg. of glucose per 100 cc. of sweat was eliminated; the average rate of excretion was 18 mg. of glucose per hour. The rate of glucose excretion was found to be definitely increased in cases of eczema in which the tolerance for sugar was lowered as revealed by a glucose tolerance test. The total volume of sweat was also increased in such cases. A group of eight patients with eczema and a normal tolerance for sugar did not display any deviation from normal, either in the amount or the rate of glucose elimination in the sweat.

The authors believe that their findings suggest a causal relationship between the excretion of sugar in the sweat and certain cases of eczema.

Samuel Ayres Jr., Los Angeles.

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Medicine

A Rational Viewpoint of the Significance of Skin Tests—Given an active extract and a favorable technique, the skin test has its definite usefulness among our diagnostic procedures. The limits of this usefulness are rather sharply defined. For one division of the general group of diseases exhibiting human hypersensitiveness, skin testing has a well known, established and definite value. This group is made up principally of the hay fevers, asthmas and a few of their concomitant skin eruptions.

A positive skin test is only the first step in the diagnosis. The second step is the proving of the contact, and that the patient reacts with each contact. We must never lose sight of the clinical facts to make a harmonious, logical, "cause and effect" relationship.

Because of the spectacular results in this group, the skin test has been carried over to other diseases of the group exhibiting human hypersensitiveness, with indefinite, sometimes misleading and often disappointing results. The reason for these failures is not difficult to understand when we analyze our positive reactions in the light of their clinical relationship. The skin test is essentially an immediate reaction. There is a growing consensus of opinion that the so-called delayed reactions are due to contamination. At any rate we depend largely on the immediate reaction. Given a case, for example, where it is known clinically that a hypersensitive manifestation occurs imme-

diately after a meal, we have a right to expect a whole food extract to give us an immediate positive skin test. But on the other hand, given a case known clinically to give rise to a delayed hypersensitive manifestation, which might imply that during the process of digestion some of the digestive products lead to hypersensitive manifestations, we have no right to expect a whole food extract to give us an immediate positive skin test; and since digestion does not occur in the tissues we should not look forward to a delayed skin reaction. When we use the skin test, then, to bring out the relationships that are not obvious clinically, we must realize here, as well, that we can only expect to pick up the immediate hypersensitive manifestations with our present-day whole food extracts. This limits the usefulness of our skin tests to food extracts.

In the groups of hay fever and asthma we are indebted to Cooke of Cornell for proving that the inhalants are of predominating etiological importance. The inhalants that are guilty must be dissolved in the mucous membrane solutions, where the factor of digestion does not play any part. We are indebted to Coca of Cornell for furnishing us active extracts in imitation mucous membrane solution. So we do have at our disposal active extracts in the inhalant group, which is the most important division in the possible etiological factors for our hay fevers and asthmas.

We must be thankful for the advances made in the usefulness of skin testing for this limited group, and we look forward to the future for the development of satisfactory extracts of foods, of drugs and of bacteria which will enable us to skin test our patients with clinical manifestations.

EDWARD MATZGER, San Francisco.

Urology

Treatment of Renal Tuberculosis—Two recent publications have appeared in the same number of the *British Medical Journal* pertaining to some points of general interest in the treatment of renal tuberculosis. There has been a prolonged dispute in medical literature about many points of pathogenesis of renal tuberculosis.

Pathologic studies of Hallé are probably more fundamental than any, recognizing a distinct hematogenous type of infection in contradistinction to a lymphogenous, and a third in which there is a mixed infection of these two sources of origin. But whether the tubercle bacillus causing the primary focus first lodges in a capillary in some portion of the kidney or in some portion of a tubule or in the pelvis remains unsettled. Some pathologists maintain that the tubercle bacillus lodges in the glomerulus as a small embolus and spreads from this point, others that it lodges in one of the small radicles of the secondary capillary system, usually in a papilla, while still others maintain that it gains a foothold in some portion of the tubule after having been filtered through Bowman's capsule.

Hallé believes that many infections occur by way of the lymphatics of the kidney, spreading from the hilus to the pelvic mucosa, and that others come by way of the blood stream, lodging in the parenchyma and that there are cases in which there is a mixed type of infection. From purely theoretical grounds it would seem reasonable to expect in either case that the exposure of each kidney would be equal and, if this is true, that the majority of tuberculous infections of the kidney would be bilateral. There are still a few who believe that the kidney is incapable of excreting live organisms without being injured thereby, in spite of the mass of accumulated evidence to the contrary. In almost all infectious diseases at the height of infection, such as typhoid fever, pneumonia, etc., pathogenic organisms specific of the infection can be repeatedly cultivated from the urine and there is a great deal of experimental evidence to the same effect, namely, that the healthy Bowman's capsule is capable of filtering live organisms without being injured just as it can filter other solid particles such as indigocarmin. Autopsy records seem to support the theoretical assumption that the tubercle bacillus attacks the kidney bilaterally inasmuch as autopsy records of individuals dying of tuberculosis show as much or more than 50 per cent bilateral involvement.

Recently an interesting pathologic study by Medlar appeared [1] in which the author examined by serial section a number of kidneys of individuals dying of tuberculosis, finding pathologic and microscopic evidence of tuberculosis in practically all the kidneys. Some of these involvements were very minute and apparently healed, but led the author to the conclusion that tuberculosis in all instances is bilateral. If these ideas of pathogenesis, therefore, are correct, the only conclusion is that many tuberculous lesions of the kidney heal, because the clinical evidence is very much contrary to the pathological. Clinically more than 86 per cent of the cases of tuberculosis of the kidney are definitely unilateral and it is upon this fact that the argument for immediate nephrectomy in such cases is based. Furthermore, clinically about 70 per cent of all cases of renal tuberculosis are primary in the kidney; that is, there is no clinical evidence of any active tuberculosis elsewhere in the body.

The more recent favorable results in tuberculosis of other parts of the body following heliotherapy have led many to assume that this treatment applied to renal tuberculosis would be likewise favorable. Thompson Walker,[2] however, states that in his experience renal tuberculosis cannot be cured by exposure of the patient to sunlight. Cases in which pus and tubercle bacilli have disappeared from the urine after such treatment are no proof of healing of the tuberculous lesion in the kidney. Such temporary occlusion of a tuberculous focus is known to take place without this treatment, but it is also well known that sooner or later there is reactivation of the process, with ultimately complete destruction of the kidney. The only recognized clinical cure in renal tuberculosis is with complete destruction of the kidney by the process of so-called autonephrectomy. The temporary improvement that may follow heliotherapy is moreover unfortunate because

it often encourages the patient to resist surgical treatment, or to postpone it and thus lose much valuable time. There can be no question but that heliotherapy is a valuable postoperative adjunct in the care of renal tuberculosis; and it has also a useful field in those advanced cases in which operation is contraindicated but, according to this experienced urologist, should never be relied on to replace treatment by operation when such treatment is indicated.

Fullerton [3] in the same journal reviews statistics in support of the view that operation remains the most hopeful and curative method of treatment in tuberculosis of the kidney and that the best results follow early nephrectomy, before deep ulceration has taken place in the bladder or before there has been spread of the disease elsewhere in the urinary tract. Even in late cases statistics show quite definitely that if the other kidney is sound the patient still may be cured. These statistics, furthermore, are based upon the sound assumption that cure cannot be considered until a period of at least ten years has elapsed from the time of nephrectomy and even this may be too short a period. But the case has now become a problem in general tuberculosis, as it is well recognized that renal tuberculosis in the final analysis is always a secondary disease, coming from some primary focus elsewhere in the body, usually the lungs or bronchial lymph glands; so that every case, even after nephrectomy, should be kept under observation and given treatment with sunlight, tuberculin, and other methods just as are all arrested or healed cases of pulmonary tuberculosis.

Frank Hinman, San Francisco.

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Surgery

About Acute Intra-Abdominal Conditions—The physician in general practice usually is the first to see patients who need emergency surgery.

An acute intra-abdominal condition always is a serious matter, the successful limitation of which depends largely upon the promptness and accuracy of the diagnosis.

The first physician called, frequently without delay, must render an opinion which will either give the patient the best chance for recovery, or which may complicate this chance. The physician is often so placed that helpful consultation, or adequate laboratory aids, are not immediately available, but through a process of elimination and the laws of probability he should be ready to give sound, definite advice. By a careful consideration of the history, the onset of symptoms and the findings, a fairly high percentage of correct diagnoses can be made in acute intra-abdominal conditions at the first visit.

One may be convinced that the trouble is the onset of some serious abdominal condition though the exact diagnosis be still in doubt. Therefore it is good practice to move such a patient at once to a place where hospital facilities are available for a full study of the patient's condition.

In such cases, so long as there is doubt of the diagnosis, the use of opiates, which mask the symptoms and thereby limit the chances of recovery, should be avoided.

To avoid error, diseases that may exist outside the abdomen and yet simulate intra-abdominal conditions should be eliminated. This group includes pneumonia, renal colic, external strangulated hernia, acute pyelitis, spinal cord disease, typhoid fever, influenza, uremia, and Pott's disease.

The general appearance of the patient offers evidence of the seriousness of the condition. A study of the history and mode of onset of the symptoms and the length of time certain symptoms have existed and their order of onset will offer additional valuable aid in arriving at a diagnosis.

Most patients who were previously well, or who give a history of somewhat similar short attacks, if found with a severe pain that has existed for a few hours, with or without vomiting, or with rigidity of the abdominal muscles, require prompt decision as to whether or not immediate surgical interference is wise.

That most important symptom, *pain,* should be carefully studied as to its location at the onset, its present location, where referred, and the time of its onset in relation to other symptoms. The usual and unusual locations of abdominal organs must be considered. If the temperature is high at the time of the onset of pain, it is advisable to search carefully for the source of the trouble outside the abdomen.

If the degree of shock is severe, with no marked rigidity of muscles and a history of only slight pain, internal hemorrhage must be considered and the patient examined for its possible source.

If the initial pains were sudden and very severe, with early marked rigidity of the abdominal muscles, perforation of a hollow viscus or acute pancreatitis become possibilities.

When a history of local tenderness of recent duration has subsided suddenly, to be followed by more or less general abdominal pain, a ruptured abscess with the onset of peritonitis must not be overlooked.

In a general way the elevated pulse is of more importance than a rise of temperature, and the onset of severe vomiting, associated with other important symptoms, often means neglect on the part of the patient, his friends, or perhaps the physician.

Sometimes the evidence is so uncertain or confusing that an exact diagnosis is impossible. It is well to remember that if an acute condition exists in the abdomen an early exploratory operation will save more lives than will be saved by the delay essential for exacting diagnostic procedures.

Foster K. Collins, Los Angeles.

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OFFICIAL NOTICE

Proposed Survey of Maternal Deaths—The Bureau of Child Hygiene of the State Department of Public Health is planning a survey to ascertain the cause of maternal deaths in California. The survey is to be made among the members of the California Medical Association and the report and any publicity given thereon will first be approved by the Council of the California Medical Association.

The California Medical Association is in sympathy with the proposed survey of the Bureau of Child Hygiene and the motive underlying—the elimination of preventable causes of maternal deaths.

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The regular meeting of the Alameda County Medical Association was held March 19 at the Ethel Moore Memorial Building, with Dr. J. L. Lohse in the chair.

The program was prepared and presented by members of the staff of Fabiola Hospital.

The first on the program was a paper by Dr. Claire Rasor on the "Surgical Treatment of Biliary Cases." Doctor Rasor reported three cases of advanced biliary tract disease reviewing the highlights in the diagnosis and pathology of this condition, outlining the laboratory and x-ray examination of particular value. Doctor Rasor emphasized the preparation of the patient for this type of surgery, calling attention to the tendency to hemorrhage and pointing out the necessity for the administration of calcium in jaundice cases in which there is a low calcium. He also stressed the importance of the fact that toxic cases should be given fluids freely and careful checks of kidney function made in order to insure operative success. In the surgical procedure itself the doctor emphasized the advantages of a long incision, careful sharp dissection of adhesions and careful survey of the liver, gall bladder, common ducts, and pancreas.

Dr. O. R. Etter then spoke upon the "Medical Management of Chronic Cholecystitis and Biliary Tract Infection" reviewing the embryological and anatomical relationship of the liver, gall bladder, pancreas and intestines, emphasizing the fact that varying degrees of hepatitis are associated with cholecystitis as well as with appendicitis, ulcer and pancreatitis, and that, therefore, cholecystitis is usually just a part of a generalized biliary tract infection. For this reason cholecystectomy, since it removes but a part of the infection, is not a cure-all. In cases in which the infection is generalized transduodenal biliary tract drainage and flushing by Lyon's technique, with vaccine therapy, according to the doctor, are valuable therapeutic agents. Doctor Etter then reported a number of cases showing favorable results attained by nonsurgical biliary tract drainage.

Dr. W. F. Holcomb discussed a "Manipulative Treatment of Fractured Os Calcis" with which he has had considerable experience with exceptionally good results and prompt return of the foot to usefulness.

Dr. A. M. Meads discussed the "Interpretation of Pyelograms," outlining normal variations and pointing out the common pathological changes with their interpretations.

Dr. E. N. Ewer reported a case of shoulder presentation with unyielding contraction ring necessitating cesarean section. The patient, age thirty-four, was in her third pregnancy. After the second labor, which was spontaneous, she had had a Webster Baldy shortening of the round ligaments for retroversion. Later a 400 mg. hour radium application had been made in the uterus for menstrual irregularity. Two months after that she became pregnant. The doctor stated that radium as a sterilizing agent is entirely unreliable unless used in amount sufficient to stop menstruation.

The pregnancy progressed uneventfully to term. The membranes ruptured before labor pains began and when the patient was first seen twenty-four hours later there was pain of a continuous character, but not severe. The shoulder could be felt through a rigid bone-like contraction ring, the opening being too small to admit the hand for the purpose of version. It did not yield as some authors say it always will, under deep ether anesthesia. A cesarean was performed and a dead macerated, odorous, eight-pound baby was extracted, and as the uterus appeared to be infected, it was removed.

Vomiting and distention of abdomen was noted within a few hours and continued. Salt and soda enemas caused the expulsion of gas and liquid feces. On the evening of the second day the temperature was 100.4, pulse 128, and the patient was restless and flighty. Gastric lavage was done several times, for the diagnosis was now acute dilatation of the stomach.

By 12 p. m. the patient was irrational and it was impossible to count the pulse. She was then given 1000 cc. 3 per cent sodium chlorid solution under the breast, according to the method of Haden and Orr, to combat the duodenal intoxication due to the paralytic obstruction. This hypertonic salt solution was repeated twice the next day.

The condition of the patient seemed hopeless at the time of the first salt injection, but improvement began immediately and she was able to retain small amounts of food within the next twenty-four hours and convalescence was soon established.

In all obstruction cases the blood chlorids are reduced and at first the condition is one of alkalosis and not acidosis.

A plea was made for proper laboratory tests to distinguish between acidosis and alkalosis. Soda and other remedies to combat acidosis, so commonly given in large quantities in the presence of postoperative vomiting, may be distinctly dangerous if the condition is alkalosis. With present-day methods of preoperative preparation, acidosis is uncommon.

After abdominal section the condition we get is lack of tone in the upper digestive tract musculature, in varying degrees of severity up to complete paralytic ileus, presenting mild or severe symptoms according to the alkalosis present.

In alkalosis the blood chlorids are lowered and the nonprotein nitrogen increased. These tests are reliable and quick of performance and should not be neglected, for effective treatment depends upon exact knowledge of the cause of the vomiting.

GERTRUDE MOORE, *Secretary.*

CONTRA COSTA COUNTY

The society held its April meeting in Richmond at the Abbott Emergency Hospital Saturday evening the 14th, 1928.

Doctor Hely presided, but turned the meeting over to Dr. U. S. Abbott, who spoke enthusiastically about the proposed new hospital for the city of Richmond. All present were called upon for an expression of opinion. Dr. W. W. Cross of Oakland pointed out the many advantages to the general practitioner afforded by an adequately equipped hospital where special consultation with late laboratory methods can be had. Mr. Bollinger, who is promoting the plan, explained the methods by which such an institution might be accomplished. He called upon the society for its support. Mr. John M. Desch of San Francisco, who is working with Mr. Bollinger, spoke of the need of a hospital in Richmond.

Doctors H. D. Neufeld of Bay Point and A. Beede of Walnut Creek were admitted to the Medical Society.

Dr. I. O. Church of Martinez, the new full-time health officer of Contra Costa County, gave an interesting report of the recent epidemic of trichiniasis, stating that there had been a total of sixteen cases with but one fatality. He pointed out that the Government does not officially inspect for trichiniasis.

Upon a motion, Doctor Hely appointed Doctors Abbott, McCullough, and Weil to confer with Mr. Bollinger and to ascertain a more detailed plan of the proposed hospital and to report to the society at a special meeting for its approval.

An after-meeting supper was enjoyed at Martin's Grill.

Members and guests present were: Doctors U. S. Abbott, G. W. Bumgarner, St. John Hely, M. Keser, H. Vestal, H. L. Carpenter, J. M. McCullough, R. Powell, W. A. Rowell, and S. N. Weil. Visitors: Dr. W. W. Cross, Oakland; Dr. W. W. Fraser and Dr. J. Crawford, Richmond; Mr. Bollinger and Mr. J. Desch.

S. N. Weil, *Secretary.*

FRESNO COUNTY

Dr. L. L. Stanley addressed a dinner meeting of the Fresno County Medical Society at the Hughes Hotel on April 3. He gave an interesting outline of the medical work being carried on at San Quentin, where he has been prison physician for fifteen years.

Spinal anesthesia is in common use there for abdominal surgery, two grains of novocain being used. Over one hundred gastro-enterostomies have been done in this way. Doctor Stanley favors this method because there is no lung irritation and no vomiting. Many interesting studies have been carried on by the prison medical staff. Transplantation of the testicle was done in thirty cases from executed men to senile men. There was considerable improvement in these cases, and the experiment was carried further by using sheep testicular substance. One thousand subjects of various kinds were treated by injections of this protein with varying results—some favorable, especially in cases of asthenia.

Dr. W. W. Cross of Oakland spoke of the high standard of medical work being done at San Quentin. The routine work in the hospital is done almost entirely by inmates, who are trained in laboratory and x-ray technique and nursing. By expert handling when they are first convicted, Doctor Cross believes the great majority of prisoners can be rehabilitated.

These papers were ably discussed by Dr. J. A. Montgomery and Dr. C. P. H. Kjaerbye of Fresno.

John M. Frawley, *Assistant Secretary.*

LOS ANGELES COUNTY

On March 8, under the title, "What the Insurance Carrier wants from the Industrial Surgeon," the Industrial Accident Section of the Los Angeles County Medical Association was addressed by a special committee from the Casualty Insurance Claim Adjustors' Association of Southern California. This committee, at the suggestion of the Industrial Accident Section, was recently appointed to cooperate with surgeons in their relation with insurance carriers in southern California.

The first speaker, referring to the surgeon's first report, emphasized the importance of: (1) An estimate of the disability, and a revision of this estimate if the disability is prolonged. (2) A straight history of the injury without exaggeration. (3) Importance of the kind of case, whether home, office, or hospital. (4) Notation on first report if x-rays were taken.

The second speaker: (1) Carriers encourage the use of consultants where indicated. (2) Give an early estimate of any permanent disability that may result. (3) Give a report pointing out the necessities for any operative procedure that may develop during the course of the case. (4) Phone or write the carrier if the case is at all irregular. (5) Send hernia cases at once to carrier for a statement.

Third speaker: (1) The importance of personal acquaintance between surgeon and claim adjustor. (2) Carriers encourage taking x-rays in new cases and as check-ups where they are indicated. (3) Early Wassermanns where indicated. (4) Surgeon should make an effort to smooth down the prejudiced, disgruntled patient. (5) Bad features of allowing nurse to treat case regularly. Surgeon should supervise frequently. (6) Importance of psychology in handling patients of peculiar mental attitude, especially skull fracture and back injuries. (7) Testimony and reports in public liability cases. Give plain straightforward statements of the facts, regardless of where the liability falls. (8) Importance of complete and detailed records of case, such as who treated it on a given day, unusual points in progress, etc. Such records aid greatly in preventing malingering. (9) Importance of past history in relation to present injury.

An excellent discussion followed during which the adjustors emphasized the importance of more frequent meetings with surgeons to promote personal acquaintance for the mutual improvement of industrial surgery in southern California.

We have arranged for at least one annual joint meeting with the claim adjustors.

The Industrial Accident Section.
Floyd Thurber, *Secretary-Treasurer.*

ORANGE COUNTY

The regular monthly meeting of the Orange County Medical Association was held in the new staff room of the Orange County General Hospital, April 3.

In an exchange of programs, members of the Riverside County Association presented the following papers on "Goiter":

Type Cases, Pathology, Diagnosis, and Medical Treatment—W. W. Roblee, M. D.

X-Ray Treatment of Goiter—P. F. Thuresson, M. D.

Practical Points in Surgery—C. R. Geith, M. D.

Doctors Wehrly, Burlew, Harwood, and Robertson joined in the discussion of the papers.

F. Harold Gobar, *Secretary.*

SAN BERNARDINO COUNTY

The April meeting of the San Bernardino County Medical Society was held at the San Bernardino County Hospital April 3, at 8 p. m.

The meeting was called to order by the president, Dr. G. G. Moseley, at 8 p. m. Minutes of the previous meeting were read and approved. Announcement was made of the Southern California Medical Association meeting to be held at Santa Barbara. Doctor Curtiss

reported for the committee on the constitution. The subject was further discussed by Doctor Moseley.

The following program was then entered upon:

Address by District Councilor Lyell C. Kinney of San Diego.

A Consideration of Certain Phases of Pyelitis—E. J. Eytinge. Discussion opened by W. F. Pritchard.

Urology and the General Practitioner—R. V. Day of Los Angeles. Discussion opened by I. L. Finkleberg.

There were only thirty-three members present. Meeting adjourned at 10 p. m.

E. J. Eytinge, *Secretary.*

SAN JOAQUIN COUNTY

The stated meeting of the San Joaquin County Medical Society was held April 5 in the hall of the Medico-Dental Club, 242 North Sutter Street. Dr. John J. Sippy, president, in the chair.

The meeting was called to order at 8:30 p. m., with an attendance of thirty-three. Those present were: Doctors E. A. Arthur, J. W. Barnes, E. L. Blackmun, J. F. Blinn, H. J. Bolinger, H. S. Chapman, Fred J. Conzelmann, J. T. Davison, J. F. Doughty, Linwood Dozier, C. F. English, William Friedberger, P. B. Gallegos, Minerva Goodman, Samuel Hanson, J. P. Hull, L. R. Johnson, H. E. Kaplan, G. H. La Berge, R. T. McGurk; F. G. Maggs, F. S. Marnell, J. E. Nelson, G. H. Rohrbacher, G. H. Sanderson, J. J. Sippy, Margaret H. Smyth, C. V. Thompson, G. J. Vischi, B. F. Walker, Leslie F. Johnson of Marshfield, Oregon; Cameron Haight of Stockton, visitors; and Dr. Ludwig Emge, chief of Stanford University Obstetric and Gynecological Service, San Francisco, guest and speaker of the evening.

The minutes of the previous meeting were read and approved.

A communication from Dr. Etta Gray, state chairman of Public Health, California Federation of Women's Clubs, relative to the resolution favoring the pure milk measure, was read.

Action: Moved by Dr. B. F. Walker, seconded by Dr. J. F. Doughty, that the chair be authorized to appoint a committee of three, the chairman to be a member of the committee. The committee to have authority to draw up the resolution favoring the pure milk measure for the action of the society at its next meeting. Motion carried.

The chair appointed Doctors Minerva Goodman and C. V. Thompson to be associated with him on this committee.

The chair then announced that the next regular meeting of the society conflicted with the state meeting.

Dr. Linwood Dozier moved, seconded by Dr. B. F. Walker, that the program committee obtain, if possible, one of the speakers from the state convention to address the society at the next meeting. Motion carried.

The chair then introduced Dr. Ludwig Emge, who spoke on "The Clinical Significance of Menstrual Disturbances." The speaker briefly related the advantages and disadvantages of the sex hormone and glandular treatment of the various menstrual disturbances, mentioning numberless glandular extracts, many of which are designated by "hifalutin" names, but are of no particular value in the treatment of menstrual disturbances. Painful menstruation or flow disturbances are not so satisfactorily treated as amenorrhea. Amenorrhea does not always mean that the woman is sick. Menstruation is not necessary for a woman to be well, but the absence of menstruation often disturbs them psychically. They should forget about it, and should not be given remedies to induce menstruation. Essential amenorrhea should be left alone, but be sure the amenorrhea is not due to systemic disease. The menopause is not simply an ovarian disturbance; it is a compensatory reaction in the entire organism. Functional hemorrhages in young adults may be helped by thyroid or iodin. In functional hemorrhage at the menopause the pituitary gland extract is very valuable. Galvinism is the best treatment for hyperplastic dysmenorrhea.

The members asked many questions which Doctor Emge answered in a very practical and instructive way.

There being no further business the chair declared the meeting adjourned at 10:30 p. m.

Fred J. Conzelmann, *Secretary.*

SAN MATEO COUNTY

On March 22 the San Mateo County Medical Society met at the home of Dr. E. W. Cleary in Burlingame for dinner. Thirty members were present. Following dinner movies of orthopedic and other subjects were shown and a general discussion followed.

The new wing of the Mills Memorial Hospital, which is very complete and modern, has just been opened. Needless to say, we are all very proud of it.

H. Wade Macomber, *Secretary.*

SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara Medical Society was held on Monday evening, March 12, at the Cottage Hospital, with the president, Dr. W. D. Sansum, in the chair.

The paper of the evening, "The X-Ray Demonstration, by Means of the Opaque Meal, of Overlooked and Ordinarily Ignored Lesions of the Cecum, Ileum, and Ascending Colon," by Dr. R. G. Taylor of Los Angeles was most interesting and instructive.

A discussion then followed by Doctors Geyman, Atsatt, Ullmann, Koefod, Means, Lewis, Ryan, Thorner, and Sansum.

At the conclusion of this paper the society went into executive session and Dr. Charles G. Baird of Santa Maria was unanimously elected to membership in the society.

A communication was read from Dr. Rexwald Brown.

Upon the invitation of Doctor Jones of Santa Maria it was moved, seconded and carried, that the society hold their May meeting at Santa Maria and that the Santa Maria doctors be responsible for the program.

There being no further business the meeting adjourned.

* * *

The regular meeting of the Santa Barbara County Medical Society was held in the St. Francis Hospital on Monday evening, April 9, with President Sansum in the chair.

The minutes of the previous meeting were read and approved.

A letter from Doctor Jones of Santa Maria was read in which he stated that he had the program arranged for a dinner meeting at the Santa Maria Inn, in May. President Sansum then urged that every member make a special effort to attend.

Communications from the California Medical Association re industrial medicine were read and questions answered.

The first paper of the evening was given by Dr. J. D. Lewis: "Remarks on Local Anesthesia." The paper was discussed by Doctors Thorner, Koefod, Bakewell, Pierce, Brush, Evans, Wilson, and Means.

The next paper was "Atypical Tuberculosis in Children" by Dr. H. E. Henderson, with illustrating slides. This paper was most interesting and was thoroughly discussed by the membership.

At the close of the meeting Doctor Lewis suggested

the following methods of increasing attendance at the meetings:

1. To have dinner meetings. This was discussed, but no definite action taken.

2. To have the secretary call up each member the morning of the meeting.

There being no further business the meeting adjourned.

W. H. Eaton, *Secretary.*

SANTA CRUZ COUNTY

The Santa Cruz County Medical Society met in joint session with the San Lorenzo Valley Chamber of Commerce at the Ben Lomond library on March 28. Dr. Jesse Farmer, chairman of the program committee, introduced the speakers of the evening. Dr. Samuel H. Hurwitz, San Francisco, discussed "The Present-Day Treatment of Asthma and Hay Fever." Dr. John H. Shephard, San Jose, our district councilor, prefaced his paper, "The Goiter Problem," with remarks concerning some of the problems now receiving the attention of the state society. The papers of both of these men were instructive and practical. The members and guests present were unanimous in their approval. The last paper of the evening, "Insanity, Medical and Legal," was presented in a very comprehensive manner by Attorney H. C. Wyckoff, Watsonville. Following the papers, refreshments were enjoyed.

The following were present: Members—Doctors Congdon, Cowden, Hatch, Liles, Randall, Sullivan, P. T. Phillips, H. Watters, Ethel Watters, Woodard. Visitors—Doctors Hurwitz, San Francisco; Shephard, San Jose; J. Harrington, Santa Cruz; and H. C. Wyckoff, Watsonville.

Samuel B. Randall, *Secretary.*

TULARE COUNTY

The regular meeting of the Tulare County Medical Society was held at Motley's Café in Visalia at 7:30, following the usual dinner at 6:30 p. m.

Members present were: Doctors Rivin, Lipson, Groesbeck, Bond, Seligman, Campbell, Zumwalt, Kohn, Weiss, Seiberth, Preston, Gilbert, Fowler, Ginsburg, Banks, Hicks.

In the absence of the president, Vice-President Seligman presided.

Doctors Donald Fowler of Exeter and H. A. Rivin of Delano were elected to membership in the society.

Dr. Leo P. Bell of the Woodland Clinic was present as our guest and speaker, and gave us an excellent talk illustrated with lantern slides on "The Diagnosis and Treatment of Carcinoma of Rectum and Sigmoid."

Discussion followed.

Meeting adjourned at 10 p. m.

H. G. Campbell, *Secretary.*

VENTURA COUNTY

The regular meeting of the Ventura County Medical Society was held at the clinic building of the county hospital on March 27.

The transfer card of Dr. R. B. Armistead, formerly of Alameda County, was read and accepted by the society. The application of Dr. J. A. King of Ojai was presented and held until next meeting.

It was moved and seconded that the society go on record favoring the passage of a law allowing only certified or pasteurized grade A milk to be distributed for human consumption in California.

The county hospital clinic staff was discussed and suggestions made as to improvements and details of organization.

D. G. Clark, *Secretary.*

CHANGES IN MEMBERSHIP

New Members

Alameda County—Mabel C. Bennett, Berkeley; Isabel P. Brier, Livermore; Andrew S. Davis, Oakland; Archie W. Henry, San Leandro.

Butte County—W. J. Costar, Jr., Sterling City.

Glenn County—William H. Walker, Willows.

Imperial—O. J. Grundset, Calexico; John D. Keye, Holtville.

Los Angeles—Edward Bak, Hollywood; Martin H. Burge, Mariam Goldwasser, Leland P. Hawkins, Delia A. Lynch, Henry John Merkle, William H. Riley, Henry P. Rover, Los Angeles; Ernest Madison Burns, Huntington Park; Verne Chase Crowl, Home Gardens, Earl William Fetter, Long Beach; Harry O. L. Lindsay, Pasadena; James J. Parsons, Monrovia; Jay G. Roberts, Pomona; J. Russell Van Sickle, Santa Monica.

Orange—Morton N. Carlile, Anaheim.

Riverside—A. D. Wilson, Palm Springs.

San Bernardino—Clement Edward Counter, Mary L. Zener, Loma Linda.

San Diego—Harry E. Breese, Chester R. Brown, Henry Leon Jones, San Diego; William E. Diefenbach, La Jolla; John Henry Mallery, San Fernando.

San Francisco—Harold Mayo Behneman, Thomas W. Cornwall, Lewis Gunther, John V. Leonard, Max L. Polse, Pearl S. Pouppirt, Wesley E. Scott, Morrell Vecki, San Francisco.

Sonoma—Bayley B. Bachelder, Sebastopol; George R. Hubbell, Petaluma.

Yuba-Sutter Counties—Leonard N. Sloan, Yuba City.

Transferred Members

Reo B. Armistead, from Alameda to Ventura County.

James B. Cutter, from Santa Cruz to San Francisco County.

Edward Liston, from Alameda to Santa Clara County.

Edward C. Love, from Contra Costa to Napa County.

Earl L. Lupton, from Sonoma to Los Angeles County.

Frederick H. Oldberg, from Contra Costa to Butte County.

Carlyle M. Pearce, from Placer to Alameda County.

Walter J. Spencer, from Yolo to San Mateo County.

Deaths

Cameron, Howard M. Died at Sacramento, March 21, 1928, age 56 years. Graduate of Medical Department University of California, 1896. Licensed in California, 1896. Doctor Cameron was a member of the Sacramento County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Derham, Vincent C. Died at San Francisco, April 6, 1928 age 42 years. Graduate of Cooper Medical College, California, 1909. Licensed in California, 1909. Doctor Derham was a member of the San Francisco County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Goodman, Edwin Wilson. Died at Livermore, April 16, 1928, age 36 years. Graduate of New York Homeopathic Medical College and Flower Hospital, New York, 1914. Licensed in California, 1922. Doctor Goodman was a member of the Alameda County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Tryoler, Adolph. Died at Los Angeles, February 18, 1928, age 58 years. Graduate of Medical Department University of Michigan, Ann Arbor, 1894. Licensed in California, 1903. Doctor Tryoler was a member of the Los Angeles County Medical Association and a Fellow of the American Medical Association.

UTAH STATE MEDICAL ASSOCIATION

W. R. CALDERWOOD, Salt Lake.....President
E. H. SMITH, Ogden.....President-Elect
M. M. CRITCHLOW, Salt Lake.....Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....
.....Associate Editor for Utah

OFFICIAL NOTICES

Dr. M. M. Critchlow has taken over the duties as secretary of the State Medical Association vice Dr. F. Steele, who has left the state. Doctor Critchlow has long served the Salt Lake County Society, and we feel that he will prove equally diligent in caring for the interests of the state organization.

Dr. B. I. Burns of the University of Utah staff has been appointed to committee on postgraduate work. The doctor is now in the East, and it is hoped that he may contribute largely to the success of the next program.

COMPONENT COUNTY SOCIETIES

SALT LAKE COUNTY

The regular meeting of the Salt Lake County Medical Society was held at the Salt Lake County Hospital, Salt Lake City, Monday, March 12.

The meeting was called to order at 8 p. m. by President William F. Beer. Twenty-eight members and five visitors were present.

The minutes of the previous meeting were read by the secretary, and accepted without correction.

George F. Roberts presented a patient with double otitis media and possible brain abscess, cured by an intravenous injection of mercurochrome.

L. N. Ossman presented a patient with a fracture of the lower end of the femur, which required an open operation. He then presented and discussed three patients with skull fracture, none of whom required operation. He also presented a patient with long-standing osteomyelitis of the femur and discussed the fracture. G. H. Pace discussed the treatment of skull fractures with magnesium sulphate.

M. C. Lindem presented a patient with a bullet wound of the chest, the bullet lodging in the left lung.

Leland Cowan presented a patient upon whom he had operated for a perforated duodenal ulcer, followed later by a gastro-enterostomy, which was complicated by thrombosis of the left femoral artery and resulted in gangrene which required amputation of the limb. Discussed by O. A. Ogilvie and G. H. Pace.

George F. Roberts presented a patient with ulcerative colitis who had a blood picture resembling that seen in pernicious anemia. He also presented two patients with endarteritis obliterans, and a deaf and dumb patient with a cleft palate.

E. R. Murphy showed a ten months old baby with nonsuppurative encephalitis.

G. H. Pace presented a patient with paralysis agitans who had a four plus spinal fluid Wassermann showing improvement under antisyphilitic treatment.

Adjournment at 9:35 p. m., after which refreshments were served.

General discussion by F. E. Straup.

The regular meeting of the Salt Lake County Medical Society was held in the Medical Arts Building, Salt Lake City, Monday, March 26.

Meeting called to order at 8:05 p. m. by President William F. Beer. Fifty-four members and two visitors were present.

Mark Brown showed x-ray films and the pathological specimen of a gastric ulcer.

E. S. Pomeroy demonstrated an instrument called the lacunascope, which he has devised.

John Z. Brown discussed a case of tube abscess with symptoms following childbirth, but no physical findings. Autopsy revealed a ruptured abscess in the anterior surface of the cecum involving the right tube and ovary and causing general peritonitis.

An extremely interesting talk on "The Treatment of Syphilis" was given by C. J. Pearsall. He discussed the various stages and the importance of intensive treatment with arsenic in the first two stages. He discussed the importance of individualism in the treatment of this disease, especially in the third stage. Discussed by William L. Rich, W. G. Schulte, T. A. Flood, George McGregor, G. H. Pace, E. S. Pomeroy, G. G. Richards, and F. B. Steele.

The second paper of the evening was on "Spastic Colitis" by Ralph Tandowsky. He discussed the various types and the dietetic treatment of each. Slides were shown illustrating the results obtained on the various types of the disease. This interesting paper was discussed by G. G. Richards, W. R. Tyndale, J. P. Kerby, S. D. Calonge, and William F. Beer.

Applications for membership signed by T. M. Aldous and R. J. Leutsker were read and turned over to the board of censors.

The secretary read a letter from F. B. Steele, secretary of the Utah State Medical Association, asking for information about malpractice suits.

The secretary read a letter from the Chamber of Commerce relative to a resolution urging the support of a measure now before Congress authorizing appropriations for the establishment and maintenance of mining experiment stations of the United States Bureau of Mines and favoring the establishment of a central western experiment station at Salt Lake City. S. G. Kahn moved that a similar resolution be adopted by the society and the secretary be instructed to communicate with the Senators and Representatives from this state to that effect.

Adjournment at 10:15 p. m.

M. M. CRITCHLOW, *Secretary.*

WEBER COUNTY

The meeting of the Weber County Medical Society was held March 29 at the Hotel Bigelow, President W. R. Brown presiding.

The usual dinner preceded the program. There were forty members present and three members of the Box Elder County Medical Society. The reading of the minutes for the previous meeting was postponed.

Dr. Fuller B. Bailey of Salt Lake City read a very interesting paper on "Diagnosis of Peptic Ulcer." He stressed particularly the need for taking a careful history, making a physical examination and gastric analysis before having an x-ray study. Dr. Martin C. Lindem of Salt Lake City read a paper on "Review of Technique in Abdominal Surgery." He reviewed the fundamentals of surgery and suggested that the surgeon improve his technique, offer the patient more sympathy, provide less hazard in operation, and more comfort during recovery.

These two papers were discussed by Doctors F. Bartlett, E. R. Dumke, and W. H. Budge.

Meeting adjourned.

GEORGE M. FISTER, *Secretary.*

NEWS

The meeting of the Holy Cross Hospital Clinical Association was held the night of March 19 at the hospital.

Clinical cases were presented by Doctors Evans, Wilcox, Cochran, Sugden, and Klein.

Dr. T. A. Flood exhibited pathological specimens.

Next meeting, April 16.

MISCELLANY

From time to time in this department of California and Western Medicine, appear columns grouped under the following headings: Comment on Current and Recent Articles in this Journal; News; Medical Economics; Readers' Forum; California State Board of Health; and California Board of Medical Examiners. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

SPECIAL SUMMER COURSES OF GRADUATE INSTRUCTION

University of California Medical School—Summer courses for graduates in medicine will be offered in the University of California Medical School, San Francisco, June 4 to June 30, 1928.

Various courses will be offered in general medicine, surgery, the specialties, and laboratory subjects. Correspondence is solicited from those who may be interested.

Address: Dean's Office, University of California Medical School, Parnassus and Fourth Avenues, San Francisco.

* * *

Stanford University Medical School—The course will begin on Monday, July 2, and end on Saturday, July 14, 1928. Attention is called to the fact that the beginning date of the course directly follows the closing date (June 30) of the special summer course given by the University of California Medical School. Those who so desire can therefore attend both courses. It will consist of forty lectures and demonstrations, each for a period of one and one-half hours. Two will be given each week-day morning, and two each week-day afternoon excepting Saturday. None will be given on July 4.

The course has been designed to meet the needs and interests of the practitioner and is intended primarily for the man who wishes to review the outstanding advances that have been made in various fields of medical knowledge during recent years. In general it is planned to have the first hour devoted to the lecture or demonstration and the succeeding half hour to informal discussion. There will be a half-hour recess after the first morning session and after the first afternoon session, with an hour recess for lunch. Lectures will begin at 9 a. m. and end at 5 p. m.

The registration fee for the course is $60, payable in advance. Make checks payable to Stanford Medical School. All applications and registration fees should be in the hands of the dean, Stanford University Medical School, 2398 Sacramento Street, San Francisco, on or before June 10, 1928. The Medical Faculty reserves the right, if an insufficient number of applications is received, to return registration fees and cancel arrangements for the course.

Full information regarding this course of lectures may be secured from the dean's office.

Fourth School of Medicine in California—The University of Southern California will open a school of medicine in September which will conform to all requirements essential to a Class A rating, its president, Dr. Rufus B. von Kleinsmid, has announced. At the opening of the school students will be received only for work in the first preclinical year. Each succeeding year an additional year's work will be added until in 1931 the full four-year course is offered.

Medical training at the University of Southern California has been suspended for the past ten years, the old medical school having closed during the World War when a shortage of faculty and students and the vicissitudes of war made such action necessary. Upon reopening, the school will have taken on the character of a new institution. It will be located on the university campus, close to the downtown section of Los Angeles, and during the first two years at least existing classroom and laboratory facilities will be utilized. The university will accept one or more of the offers of Los Angeles hospitals to become teaching centers when the clinical years of medicine are offered.

In formulating its plans for the new medical school the university has the backing of the Los Angeles County Medical Society with more than 1600 members and the membership of the University of Southern California Medical Alumni Association numbering more than 1000. Two committees from each of these associations have jointly undertaken the task of raising $500,000 in five years to provide for the expansion of the school. To make possible the opening of the school the university has set aside for its use $500,000 in endowment. To this will be added the funds subscribed by the medical profession.

The university at present offers premedical training, more than seventy students being registered in these courses at present. Students have prepared and been admitted to Stanford, University of California, Northwestern, Rush, Washington University, Johns Hopkins, and Harvard medical schools.

The only other medical school of a Class A rating in southern California is the College of Medical Evangelists at Loma Linda and Los Angeles. The nearest medical schools are Stanford and the University of California in San Francisco.

The university in its organization of the medical school has been counseled by an executive committee consisting of Dr. Edward M. Pallette, president of the Los Angeles County Medical Society; Dr. W. A. Morrison, chairman of the educational committee of the society; Dr. W. W. Beckett, chairman of the educational committee of the University of Southern California Medical Alumni Association, Dr. Joseph King, and Dr. E. A. Bryant, all of Los Angeles.

The Greens' Ophthalmic Hospital—The medical profession has been invited to visit and inspect the Greens' Ophthalmic Hospital on May 19 and 20, after which it will be opened for admission of patients.

The hospital has been especially built and equipped for the practice of ophthalmology.

A portion of the building has been set aside for the use of a part-pay dispensary for the care of patients of limited means, similar to that conducted by Cornell University.

Annual Meeting of American Association for the Study of Goiter will be held in Denver June 18, 19, and 20. On the morning of June 18 two diagnostic clinics will be held. One at the Denver General Hospital under the direction of Doctors H. S. Plummer and H. S. Haines. The other at the Colorado General Hospital will be conducted by Dr. William D. Haggard.

The afternoon of that day will be given up to a symposium on the etiology and prophylaxis of goiter.

The second morning from 8 until 12 o'clock will be devoted to operative clinics (all goiter) at the several Denver hospitals.

The afternoon sessions of that day will be opened by an address by Prof. Dr. B. Breitner of the Von Eiselberg Clinic, Vienna, Austria. This address will be on "Goiter and Iodin in Animal Experiments."

The papers of the scientific program, about thirty in number, cover particularly every phase of goiter,

and no one interested in this important problem can help but profit by coming to the meeting.

All members of the state and provincial medical societies are eligible, and are cordially invited to participate in the conference as attending members.

New Institute of Research—At a recent meeting of the board of directors of the Desert Sanatorium of Southern Arizona, Inc., a quarter of a million dollars was voted to establish an Institute of Research, and the following directors and officers were elected: Bernard L. Wyatt, M. D., F. A. C. P., director; Roland Davison, M. D., medical director; Daniel T. MacDougal, M. D., research consultant.

The Research Institute of the Desert Sanatorium will devote its activities to the study of the nature of solar radiations and their effects on living matter.

First International Oto-Rhino-Laryngological Congress will meet at Copenhagen, July 29 to 31, 1928. Any who are interested therein can obtain further information from the American Committee of this Congress, 25 Broadway, Suite 656, New York City, New York.

Members of the staff of the Stanford University Medical School have received the following promotions:

Academic Staff—To assistant professorship in medicine: William Dock, M. D.

To instructorship in medicine: John Kent Lewis, M. D.; Eaton M. MacKay, M. D. (new appointment).

To instructorship in pharmacology: Charles C. Johnson, Ph. D.

Clinical Staff—To clinical professorship in surgery and appointed head of the division of ophthalmology: Hans Barkan, M. D. (ophthalmology).

To associate clinical professorship in medicine: Jay Marion Read, M. D.

To assistant clinical professorship in medicine: Stuart C. Way, M. D. (Dermatology).

To assistant clinical professorship in surgery: Wilber Frank Swett, M. D. (ophthalmology).

To assistant clinical professorship in obstetrics and gynecology: Albert Victor Pettit, M. D.

To clinical instructorship in medicine: Walter Schilling, M. D. (neuropsychiatry); Pleasant A. Taylor, M. D.; Joseph Charles Cuneo, M. D.

To clinical instructorship in surgery: Henry A. R. Kreutzmann, M. D. (genito-urinary).

To clinical instructorship in obstetrics and gynecology: Lewis Michelson, M. D.

Chicago's Radiological Convention—The Radiological Society of North America will hold its fourteenth annual convention in Chicago, December 3 to 7 inclusive, 1928. The Drake Hotel, Lake Shore Drive and North Michigan Avenue, has been selected as the headquarters. We are assured of ample accommodations and exceptionally reasonable rates and of the best and most efficient service.

There are no registration fees, no additional expense. Plans are under way now to secure reduced transportation rates.

Much attention is being given to arranging for scientific and commercial exhibits. These exhibits will afford a postgraduate course of instruction in nearly every branch of medical science. Clinics covering radiological problems as well as other branches of medicine will be given every day during the session. We are assured by the program committee of an instructive and interesting scientific session and a program upon which will appear representative men from all sections of this country and Europe.

Dr. S. A. Kinnier Wilson of London gave the annual address for Alpha Omega Alpha on Saturday morning, April 28, at 10 a. m., in Toland Hall, University of California Hospital, San Francisco.

Presentation of the "Oath of Hippocrates" to the senior students was made by Dr. William J. Kerr.

The "Oath of Hippocrates" was reprinted in an edition of five hundred copies by Taylor & Taylor, San Francisco, 1927, for Dr. William J. Kerr. It is reproduced in broadside in the distinguished form designed and set in Forum types in 1916 by Frederick W. Goudy, printer and letter designer, of Marlborough-on-Hudson, New York, of which he printed 126 copies on a hand press on Kelmscott hand-made paper (the paper used in this reprint O, for Paul B. Hoeber, publisher, of New York City). The Forum types were designed by Goudy following his study at first hand of the beautiful letter forms evolved by the stonecutters of ancient Rome. The translation is taken from that made of the works of Hippocrates by Francis Adams, LL.D., surgeon, first published in 1849 by the Sydenham Society, London, in two volumes, octavo.

The Pacific Coast Oto-Ophthalmological Society held its sixteenth annual session at Santa Barbara on April 18 to 20, inclusive. At the same time the annual meeting of the western section of the American Laryngological Society convened. That organization held its session on April 21.

The meetings were presided over by the president, Dr. William J. Mellinger of Santa Barbara. Among the visiting speakers were Dr. Luther C. Peter of Philadelphia, who discussed "Glaucoma"; Dr. Norval H. Pierce of Chicago, who discussed the "Subepithelial Connection Tissue with the Marrow Spaces."

The meeting was well attended, and in addition to the excellent papers, ample opportunity for entertainment was provided.

Another Public Health Worker Loses His Life in Line of Duty—For more than twenty years the Public Health Service has conducted studies of a very fatal disease which occurs in certain areas in the western states. This disease is known as Rocky Mountain spotted fever. During the course of the investigations made by the Public Health Service, four workers have lost their lives from the disease, contracted in connection with their official duties.

The most recent worker to lose his life from Rocky Mountain spotted fever is A. Leroy Kerlee, who was employed in the Public Health Service laboratory at Hamilton, Montana, as a bacteriologist. He was a recent graduate of the Montana State College, and had been in the Service since September, 1927.

Those who had previously lost their lives in this work are Dr. T. B. McClintic, who died in 1921; W. E. Gettinger, a laboratory assistant who died in 1922; and G. H. Cowan, a field assistant, who died in 1924.

The warfare of science against disease has its hazards. A. Leroy Kerlee made the supreme sacrifice in the battlefield of the laboratory.—*U. S. Public Health Service.*

A Home for the Massachusetts Medical Society—At the last meeting of the Council of the Massachusetts Medical Society a committee was appointed to consider ways and means of acquiring a permanent home for the Massachusetts Medical Society, and to solicit funds to acquire such a home if it deemed it advisable. The committee was empowered to appoint subcommittees from the district societies. This committee has voted that a permanent home in Boston for the society is a most desirable thing and that subcommittees from the district societies should be appointed to raise funds for such a purpose.

At present the offices used by the society are inadequate and the rent paid for them amounts to a considerable sum. The activities of the society, especially of the journal, are increasing rapidly, and en-

larged quarters are imperative. It seems to the committee that it is desirable for the Massachusetts Medical Society to own its own building in Boston. This building would house the offices of the journal and various officers of the society. It would provide adequate room for council and committee meetings and for medical gatherings of various sorts. It would provide definite headquarters for varied medical activities throughout the state and New England. It would serve as headquarters with some advantages of a club for members of the society. Such a building could be made virtually if not actually self-supporting and thus benefit the society. The committee voted to launch a campaign to raise $125,000. For this sum a most desirable building can be purchased and equipped, and provide the nucleus of a sinking or endowment fund. It is the idea of the committee not to limit the amount of money to be raised. Any sum over and above the amount actually to be used for purchase and equipment of the home would be added to the endowment fund.—*New England Journal of Medicine.*

Higher Compensation for Child Injured While Illegally Employed—A boy of fifteen lost his arm in a Cleveland factory while he was working in violation of three provisions of the child labor law, being under sixteen and working at night on a dangerous machine without an employment certificate. The Industrial Commission of Ohio granted him 50 per cent additional compensation over the regular workmen's compensation for this type of injury, for the first time applying to a violation of the child labor law the provision of the constitutional amendment of 1924 empowering the commission to grant additional compensation up to 50 per cent in cases of injury shown to be due to "the failure of the employer to comply with any specific requirement for the protection of the lives, health, or safety of employees enacted by the General Assembly."—*U. S. Department of Labor.*

Grand Rapids Has a Junior Vocational School—This junior vocational school is for retarded children at least fourteen years of age who are not eligible to the regular city vocational schools because they have not completed the eighth grade. The completion of any specific grade is not required. Half of the school day is spent in training in the shop or workroom. It is said to be proving successful with children who are restless and discontented in the regular grades.—*U. S. Department of Labor.*

Oleomargarine—Several bills dealing with oleomargarine have recently been introduced in Congress. Thus H. R. 11848 would place a tax of ten cents a pound on this product when colored in any manner. The reason for this measure is said to be because of present practices in using yellow fat in old cattle to make some makes of oleomargarine resemble butter in appearance. Another bill, H. R. 12246, would forbid any money appropriated for the support of any ward or employee of the government to be expended to purchase oleomargarine, filled milk, or other alleged substitutes for butter. A third bill, S. 3737, would likewise impose taxes on oleomargarine made to look like butter.—*New England J. Med.*

Antivivisection—The ubiquitous antivivisection bill, said to have been inspired by interests in New England, has made its customary appearance in Congress, this time as H. R. 11998. This measure would make it a misdemeanor for any person to operate or experiment on a living dog in the District of Columbia or any Territory, except for the purpose of healing or curing the dog.—*New England J. Med.*

Dr. H. S. Cumming Reappointed Surgeon-General of United States Public Health Service—On January 27, the President sent to the United States Senate the name of Dr. Hugh S. Cumming for reappointment as Surgeon-General of the United States Public Health Service. It was confirmed immediately without the formality of being referred to a committee.

The appointment of Surgeon-General Cumming to succeed himself is sufficient ground in itself for congratulating the people of the country; but there is even a greater reason for felicitation—the fact that the services of one who has proved his worth in the field of public health are appreciated to the extent that no question of replacing him at the expiration of his term of office arises, either in the mind of the President or in the Congress.—*Health News.*

"Vagabonding"—Verily, there is nothing new under the sun. In German universities it has been the custom of students to attend classes "according to their own sweet will." Popular teachers always have a large student attendance on their lectures and demonstrations. There is no university regulation that prescribes whose classes should be attended. A teacher with the lowest rank in the faculty may have the largest student attendance. The final test of proficiency in any subject is the examination, which is taken whenever the student is ready for a test.

Now, word is received that a similar practice, in principle, is in vogue among the students of Harvard University. It has been termed "vagabonding," and refers to attendance on lectures not included in the student's regular courses. Professors are said to encourage it, and every morning the *Crimson* prints a list of lectures of the day that are likely to be of general interest.

Perhaps some medical school may wish to introduce such a plan into its curriculum as a stimulus to its teachers and by way of experiment in medical education. It would represent a wide excursion into the field of election about which much is being said but little done. A near approach is the method employed in the University of Wisconsin Medical School in the department of anatomy. The student is assigned his task and does it when and how he chooses, presenting himself for examination whenever he feels he is ready for it. "Vagabonding" should receive serious thought by medical educators.—*Bull. Association of Am. Med. Colleges.*

READERS' FORUM

Basic Science Acts

Santa Monica, California.
April 16, 1928.

To the Editors:

A multiplicity of licensing boards in any state almost inevitably leads to confusion, conflict of authority, and to a lowering of standards of practitioners of the healing art. It is a well-known human trait that where identical work is to be done by several groups the task is very likely to be neglected.

In the past examiners have devoted much time to ascertaining the preliminary educational requirements of applicants. This work, vital and necessary as it may be, could undoubtedly be better accomplished by another agency, and the professional board devote its energy to determining the degree of skill possessed by the applicants. A well-trained scientific man, regardless of his school of practice, will treat the sick in about the same way and will spend approximately the same amount of time in learning how to do it. The danger to the public lies not so much in difference between schools of practice, as in the deficiencies of practitioners with regard to basic educational requirements.

This situation has been met in Wisconsin, Connecticut, Nebraska, Washington, and Minnesota by the enactment of basic science laws. California is plagued by the existence of multiple boards. The

establishment of a board of basic sciences, to insure that all practitioners of the healing art should have at least a high school education and possibly one or two years of colleges, would do a great deal to protect the sick from exploitation by the ill-trained and incompetent.

The thinking members of the medical profession could do themselves and the public no greater service than to urge the early adoption of such legislation.

Louis E. Mahoney, M. D.

TWENTY-FIVE YEARS AGO *

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Volume 1, No. 7, May, 1903

From some editorial notes:

. . . The Publication Committee and the editor are very desirous of having as full reports as possible of the meetings and proceedings of the various county

. . . Every member of the state society and every member of a county society—is requested to advise societies throughout the state for publication in the journal. . . .

the journal at once if there is any irregularity in the receipt of the journal by himself or any other member whom he knows. Mistakes in addresses or in county society rolls are bound to occur from time to time, and these can only be corrected when they are called to the attention of the publication office. . . .

From the Report of the Proceedings of the Medical Society of the State of California at its thirty-third annual session held at Potter Hotel, Santa Barbara, April 21-23, 1903:

. . . Dr. F. B. Carpenter then read the annual address of the president, which was as follows: . . .

. . . For the past fifteen years efforts have been made to reorganize the A. M. A. on lines satisfactory to the profession of the country, but, owing to the unwieldiness of a body so large, little actual progress had been made until three years ago, at Atlantic City, when the matter of formulating the manner of doing it was entrusted to a carefully selected committee of three. As a result of their labors there was given to the Association a Constitution and By-Laws which completely remodeled its construction, reorganizing on the plan which makes the state society of each state an integral part of the parent organization.

This reorganization was formally effected two years ago at the St. Paul meeting, and stands today as the foundation upon which is being reared the most colossal organization of medical men which this country has ever known.

In California this society is the integral part of that great fabric, and acting upon the suggestion from the central body, this society ordered the appointment of a large and representative committee, whose duty it should be to present to this society a new Constitution and By-laws, modeled upon the skeleton outlined by the A. M. A. . . .

. . . It is thus seen that only the member of a state society may become a member of the A. M. A., and only a member of a county society may become a member of a state society. . . .

. . . The county societies are reorganized on broader lines, and more liberal policies than heretofore. The aim now is to eliminate personalities and petty jealousies from the local bodies, making it possible for any reputable physician to attain a membership in his county society. This is his due; he has a right to demand it, and only grossly unprofessional acts are intended to debar him from professional association with his neighbors. Personally and socially he may be their associate or not, as circumstances dictate, but if his professional career will bear a fair criticism he should be taken into the fold and made one with his fellows. . . .

. . . Dr. William Watt Kerr, in his address on Medicine, called attention to the very extensive variety of the clinical material to be found on the Pacific Coast, due largely to our relations with the Orient. The advances in the technique of diagnosis were touched upon, and attention called to the many peculiar cases that were heretofore wrongly diagnosed. . . .

. . . The address on Surgery, by Dr. Granville MacGowan of Los Angeles, dealt not with a résumé or encyclopedic account of many questions in surgery, but with a general consideration of the status of surgical work upon the prostate. . . .

. . . Dr. George H. Evans presented his report as secretary, as follows:

. . . At about the time the new constitution and by-laws were ratified, a committee appointed for the purpose by the American Medical Association drew up a constitution for state societies which it was desired all such bodies should adopt, in the interest of uniformity and in order to carry out the general plan of organization of the profession throughout the land. . . .

. . . The membership of the society is as follows:

Affiliated members by county societies:		
Alameda	89	
Contra Costa	14	
Fresno	33	
Humboldt	20	
Los Angeles	203	
Marin	10	
Orange	20	
Placer	12	
Riverside	19	
Sacramento	44	
San Diego	19	
San Bernardino	22	
San Francisco	370	
San Joaquin	26	
Santa Clara	28	
Santa Barbara	15	
Yuba and Sutter	11	
	—	955
Members-at-Large		118
Total active members		1,073
Honorary members	23	
Permanent members	10	
Deceased members	6	
	—	39
Total year		1,112

From the report of the Memorial Committee, George William Davis, M. D., chairman:

. . . To reward the deserving, and duly recognize modest merit, is the delight of generous hearts; to honor our dead in this memorial hour, is the last tribute with which this society can grace the memory of our departed members. . . .

In Memoriam—Cephas L. Bard

Doctor Cephas L. Bard was one of the prominent physicians of California. . . .

. . . Doctor Bard was a member and president of the Ventura County Society of Pioneers from the year of its organization. He was president of the Ventura County Medical Society. He was an active member of the Medical Society of the State of California, and was unanimously elected its president in 1897. . . .

. . . At Ventura, jointly with his brother, United States Senator Bard, he erected and furnished a hospital in memory of their mother, which was intended to be a gift to his adopted town. The hospital was finished three or four months before his death and was, perhaps, the last public and generous deed of a well-spent life. . . .

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.
Secretary of the Board

Charging that the Berkeley Chiropractic College and the Berkeley Chiropractic High School are diploma mills, the state of California, on advice of the State Board of Chiropractic Examiners, yesterday appeared in the court of Judge Trabucco in Oakland asking that the franchise of the institutions be revoked. It is stated in the complaint that the schools are conducted solely for pecuniary purposes and award diplomas without proper examination and without proper courses of study.—*San Francisco Chronicle,* March 23, 1928.

According to reports, Cecelia Bartholomew of San Francisco, recently charged with violation of the Medical Practice Act, had in her possession a diploma issued by the American School of Naturopathy (San Francisco branch); a diploma from the Christian Philosophical Institute, signed by Bishop Leroy Cosper, who some time since served a jail sentence; and a diploma issued by the Spectro-Chrome Institute of America signed Dinshah P. Ghadiali, M. D., whose history was printed in the *A. M. A. Journal* of January 26, 1924, page 321.

The results of the February 1928 examination given by the Board of Medical Examiners show fifty-seven applicants were granted physicians' and surgeons' certificates.

According to recent reports, J. C. Chartier, who conducts a pharmacy in Oakland, pleaded guilty on March 15, 1928, to a charge of violation of the Medical Practice Act and paid a fine of $100. The report relates that Chartier made house calls, treated patients in his drug store, and made use of narcotic registration permit No. 4763, formerly held by Dr. Edward Blair, San Francisco, who is now reported to be in Persia.

According to reports, Shun Gee Chew, San Francisco, Chinese herbalist, who is licensed as a chiropractor based on a diploma issued by the Chiropractic University, Kansas City, Missouri, was recently arrested on a charge of violation of the Medical Practice Act.

According to the San Francisco *Examiner* of April 17, 1928, Governor C. C. Young has appointed on the Chiropractic Board "Dr. Harry P. Fish, Santa Rosa, and Dr. Claude L. Fishback, Fresno, to succeed Dr. Vernon Malcolm, San Francisco, and Dr. Homer B. Skinner, Oroville, terms expired."

Another alleged fraudulent diploma bearing the name of the College of Physicians and Surgeons of San Francisco is reported to have been presented to the Board of Naturopathic Examiners of Oregon by an individual named G. T. O'Sullivan.

A petition for a writ of review in the guardianship proceedings of Mrs. Ernestine Englehart of Oakland was filed here in the State Supreme Court yesterday by Attorney Carl W. Mueller. (*San Francisco Examiner,* March 22, 1928.) ("News Items," December, 1927.)

According to reports, Rose A. G. Fraser, Sacramento, was recently arrested on a charge of violation of the Medical Practice Act. She related that she was graduated from the Buffalo Medical College in 1889, which statement cannot be verified through the records of said institution.

James A. Hadley, whose license to practice medicine was revoked by the State Board of Medical Examiners March 1, today filed a petition for writ of review of the testimony on which he was held guilty of violating the Medical Practice Act.—*San Francisco Call,* March 23, 1928.

According to reports, William Hicks, licensed chiropractor of Los Angeles, on April 5, 1928, pleaded guilty to a violation of the Medical Practice Act and paid a fine of $100, the report relating: "It appears that Hicks not only violated the chiropractic act by practicing beyond the limits of his certificate, but that he also violated the Medical and Optometry acts."

It is reported that on April 6, S. B. Hilf, Los Angeles, was found guilty of violation of the Medical Practice Act and was sentenced to serve ninety days in the city jail, sentence being suspended for two years.

The Board of Medical Examiners by resolution recently forwarded a protest to James Doran, Prohibitioner Commissioner, Washington, D. C., based on the refusal of the Internal Revenue Department to furnish information to the Board of Medical Examiners relative to federal narcotic violations that have been settled in compromise by payment of a specified amount of cash, thereby quashing possible legal proceedings.

R. L. Palmer, licensed chiropractor, El Centro, California, on March 23 is alleged to have pleaded guilty to violation of the Medical Practice Act and to have been fined $200, fine being suspended for two years on condition of no further violation of the state Medical Practice Act.

According to a press dispatch dated Fresno, April 14, published in the San Francisco *Chronicle* of April 15: "Motion of the state medical board to have dismissed the application of Dr. Carl H. McPheeters for a writ reviewing its action in revoking his license on the ground that he betrayed professional secrets was taken under advisement yesterday by Superior Judge Charles Bernard. The court continued the return of the petition to May 4. McPheeters also is facing a charge of sending obscene matter through the mail."

Dr. George H. Norris, wanted for the attempted murder of a wealthy widow in San Francisco five years ago, has been captured in Detroit.—*San Francisco Examiner,* March 29, 1928.

Exonerated of all blame for the death of Miss Elizabeth Brown, February 22, Municipal Judge William S. Baird yesterday dismissed the murder complaint against Dr. Eliphalet Patee after taking the matter under advisement for five days.—*Los Angeles Illustrated Daily News,* March 20, 1928.

According to the Ventura *Free Press* of March 16, 1928, Dr. Allen Peek, who on an affidavit filed by Earl Bell, police lieutenant, was held for hearing, was adjudged sane after a hearing held by five local physicians, it being related that "Doctor Peek was arrested by Earl Bell Monday night after it was reported he had been seen prowling about his office with a revolver in his hand."

According to reports, a lecturer named Clanton Thomas, 964 Market Street, San Francisco, was recently arrested on a charge of violation of the Medical Practice Act, he being reported, among other things, as distributing a pamphlet under the name of the "Better Race Society," 426 San Fernando Building, Los Angeles; and also published by the "Better Health Society."

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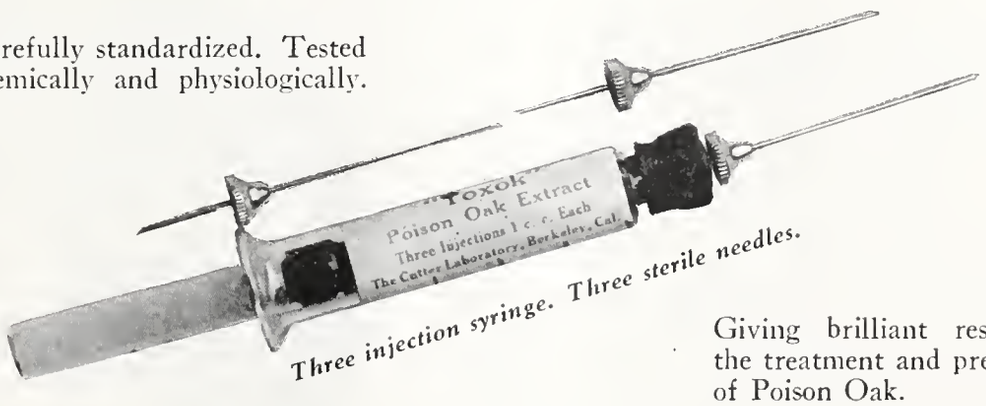

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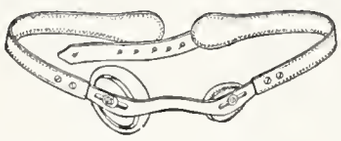

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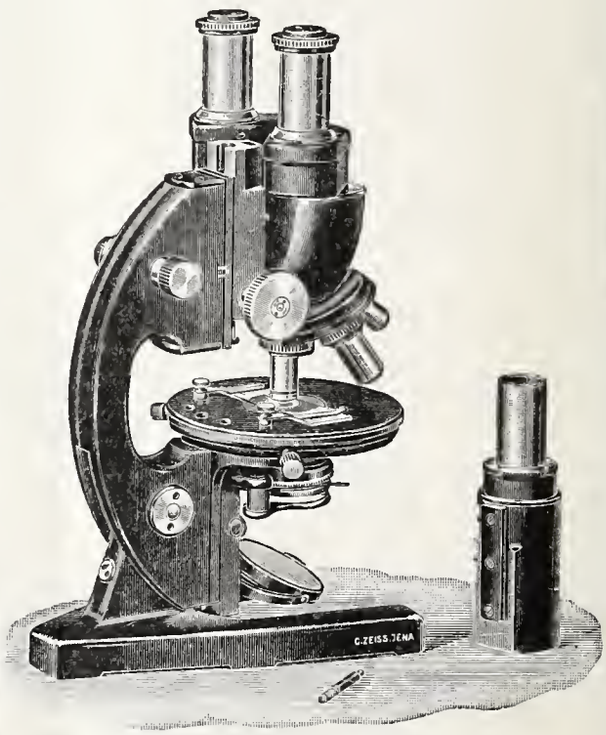

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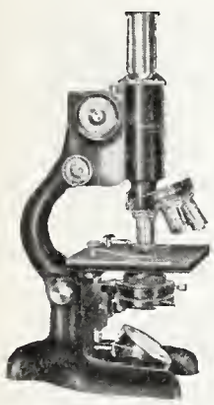

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TRUTH ABOUT MEDICINE

(Continued from Page 625)

unless it is backed up by adequate tests for the kind of potency claimed.—*Jour. A. M. A.,* March 10, 1928, p. 770.

The Vit-O-Net Quackery—Credulity moves in waves and quackery rides on the crest of the wave. The 1927-28 brand of medical humbug is Magnetism with a capital "M." A concern known as the Vit-O-Net Corporation (previously the Vit-O-Net Manufacturing Company), and having headquarters in Chicago, puts out a large-sized electric heating pad or blanket which sells for $102.50. The concern that exploits it evidently realizes that for one person that would buy its device as a heating pad, there are fifty who will buy it as a cure for whatever ails them. From the testimonials and claims made by the exploiters it appears that the Vit-O-Net blanket cures cancer, arthritis, Bright's disease, eczema, neuritis, paralysis, anemia, low blood pressure, high blood pressure, goiter, epilepsy, asthma, prostatic trouble, deafness, and various other conditions. The Vit-O-Net blanket is a convenient and expensive way of applying continuous heat to the body. Further than this one cannot truthfully go. The curative value of the Vit-O-Net blanket is that of heat which differs not at all from that developed from a hot water bottle or of a hot brick wrapped in a sock!—*Jour. A. M. A.,* March 10, 1928, p. 789.

Epinephrin and Ephedrin in Relation to Blood Pressure—The action of ephedrin on the circulation is different from that of epinephrin. While the latter is a powerful heart stimulant, ephedrin is a direct depressant to the heart. A heart that has been depressed by continued low blood pressure is so sensitive to the depressant action of ephedrin that the poor condition of the circulation may be aggravated by it. It is also

(Continued on Page 699)

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TRUTH ABOUT MEDICINE

(Continued from Page 697)

much feebler as a vasoconstrictor than is epinephrin. Hence, as a circulatory stimulant, ephedrin has been a disappointment.—*Jour. A. M. A.*, March 10, 1928, p. 791.

Relative Safety of Sedative Drugs—Sulphonmethane (sulphonal) and sulphonethylmethane (trional) have to a large extent been superseded by phenobarbital (luminal) and barbital (veronal), especially because the sulphonmethanes are apt to make the patient drowsy the day after the ingestion, and are liable to produce an alteration in the blood which manifests itself by hematoporphyrinuria. Barbital is a relatively safe but feeble hypnotic which may be preferred to all others when a mild effect suffices. Phenobarbital is a much more potent drug. It is safe when given in a dose of from 0.1 to 0.2 grams. It is contraindicated in the presence of marked asthenia and in nephritis.—*Jour. A. M. A.*, March 10, 1928, p. 792.

BiSoDol—The advertising of the "BiSoDol Company" states that BiSoDol is composed of "Bismuth Subnit., Magnes. Carb., Sodium Bicarb., Carica Papaya, Diastase, 0.1 Menth, Pip," but contains no information in regard to the amount of each ingredient. The Council on Pharmacy and Chemistry has not examined the preparation nor has the A. M. A. Chemical Laboratory considered it worth while to analyze this "shotgun" mixture.—*Jour. A. M. A.*, March 10, 1928, p. 793.

Argyrol Omitted from N. N. R.—Argyrol is included in New and Nonofficial Remedies as a brand of mild silver protein, U. S. P. At the expiration of the period for which Argyrol stood accepted, the Council on Pharmacy and Chemistry informed the A. C. Barnes Company that the advertising claims for therapeutic efficacy of this product went beyond

(Continued on next page)

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TRUTH ABOUT MEDICINE

(Continued from previous page)

those of mild antiseptic or protective value allowed for mild silver protein and asked that the firm present evidence to substantiate these claims; the firm was also informed that in order to permit the continued acceptance of the product the labels and advertising must bear the pharmacopeial title, mild silver protein, as a synonym. The firm presented no satisfactory evidence for the therapeutic claims in question and refused to mention the pharmacopeial name on the labels and advertising of Argyrol. The Council therefore voted to omit Argyrol from New and Nonofficial Remedies and authorized publication of its report explaining this action.—*Jour. A. M. A.,* March 17, 1928, p. 849.

Proprietary Preparations and Proprietary Names—The rule of the Council on Pharmacy and Chemistry of the American Medical Association provides that, when a proprietary substance is admitted to the United States Pharmacopeia, it will be retained in New and Nonofficial Remedies only if the official name is given prominence on the labels and in the advertising. The justice of this rule concerning proprietary names cannot be questioned. It is in the interest of scientific medicine and of medical progress. The history of Argyrol, which the Council has been obliged to omit from New and Nonofficial Remedies for conflict with this rule, is another example of the manner in which clinical evidence, none too carefully obtained, may boost a new remedy into popularity beyond its due. The promoter of a proprietary preparation, riding on the crest of a wave of popularity, is seldom willing to come down to the level of the quiet sea when the storm subsides. The Council has examined calmly and dispassionately the therapeutic claims made for Argyrol and has been unable to find evidence for some claims which it terms essentially misleading. Furthermore the manufacturer is apparently unwilling to adopt the pharmacopeial synonym for it. The insistence on this synonym is important that physicians may fully comprehend the nature of the substance that they are using. The first duty of anyone working in the field of medicine, be he investigator, teacher, physician, or manufacturer, is to the public that is being served. This policy has been fundamental in compelling the omission of Argyrol.—*Jour. A. M. A.,* March 17, 1928, p. 855.

More Misbranded Nostrums—The following products have been the subject of prosecution by the Food, Drug and Insecticide Administration of the United States Department of Agriculture which enforces the Federal Food and Drugs Act: Pildoras Ovaricura (Flar Medicine Company) containing iron sulphate and plant material, including aconite, aloe, ginger, and cinnamon. Cerebrotono (Flar Medicine Company) containing calcium, sodium, potassium and iron glycerophosphates, with plant extractives, alcohol and water. Pildoras Ferrogenas (Flar Medicine Company) containing iron and potassium carbonate and sulphate comparable to Blaud's pills. Zovia (Zovia Wonder Water Company) a solution of Epsom salt in water. Elixir Eneglotaria (Eneglotaria Medicine Company) consisting essentially of mercury and potassium iodids, sarsaparilla extract, alcohol and water. Jarabe de Guayaco Eneglotaria (Eneglotaria Medicine Company) consisting essentially of mercury and potassium iodids, guaiacol, sugar, alcohol and water.—*Jour. A. M. A.,* March 17, 1928, p. 872.

Absorption of Insulin from the Alimentary Tract—In recent experiments advantage has been taken of the antitryptic effect of blood serum to protect insulin given by oral paths from pancreatic digestive destruction. Observations on a series of depancreatized dogs prove that insulin protected by blood serum from the proteolytic destruction of the digestive enzymes can be absorbed in significant amounts from the alimen-

(Continued on Page 705)

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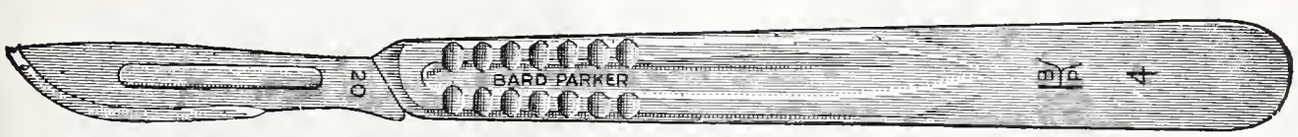

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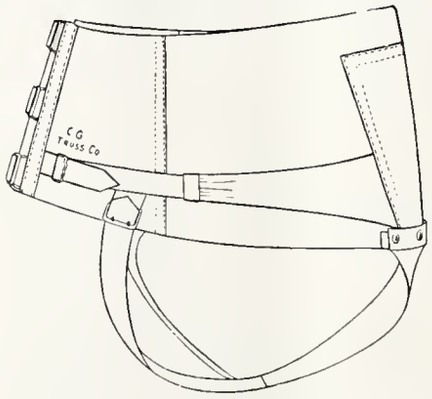

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TRUTH ABOUT MEDICINES

(Continued from Page 700)

tary tract. While the experiments are promising, this is not the story of a completely dependable method of oral therapy; the results do not establish the usefulness of the host of proprietary insulin substitutes proposed for oral use.—*Jour. A. M. A.*, March 24, 1928, p. 985.

Matthews' Phos-Hepatic Extract and Livermeal— No product of the Livermeal Corporation which markets "Livermeal" and "Matthews' Phos-Hepatic Extract" has been accepted for New and Nonofficial Remedies nor has the firm requested the Council on Pharmacy and Chemistry to consider any product. Apparently the Livermeal Corporation is "pushing" its shotgun proprietary "Matthews' Phos-Hepatic Extract" which is claimed to contain the "extractive principles" of fresh beef liver in "combination" with sodium glycerophosphate and "carefully selected carminatives and digestants." So far, the Council on Pharmacy and Chemistry has accepted but one liver extract preparation: Liver Extract No. 343.—*Jour. A. M. A.*, March 24, 1928, p. 997.

Radio-Rem Omitted from N. N. R.—The Council on Pharmacy and Chemistry reports that a report announcing the omission of Radio-Rem was prepared in 1925, but not published at the time because the Radium Ore Revigator Company stated that it had purchased the Radium Therapy Corporation which controlled the Radio-Rem outfits and that these were no longer marketed. Recently the Council received a letter from the Radium Ore Revigator Company which suggested that the former recognition of Radio-Rem may be used as a means of exploiting the "Revigator (Health Spring Strength)." The Council authorized publication of its report explaining the omission of Radio-Rem from New and Nonofficial

(Continued on next page)

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TRUTH ABOUT MEDICINE

(Continued from previous page)

Remedies. The report explains that Radio-Rem is an apparatus designed for the production of radioactive drinking water, marketed by the Radium Therapy Corporation, San Francisco, California. The Council found that there was a close connection between the firm which marketed the Radio-Rem outfits and the firm which exploited the Radium Ore Revigator, an apparatus exploited to the public with misleading claims. The Council directed the omission of the Radio-Rem outfits from New and Nonofficial Remedies because they were used to further the sale of the Radium Ore Revigator, which is exploited to the public with false claims for the therapeutic efficiency of

(Continued on Page 708)

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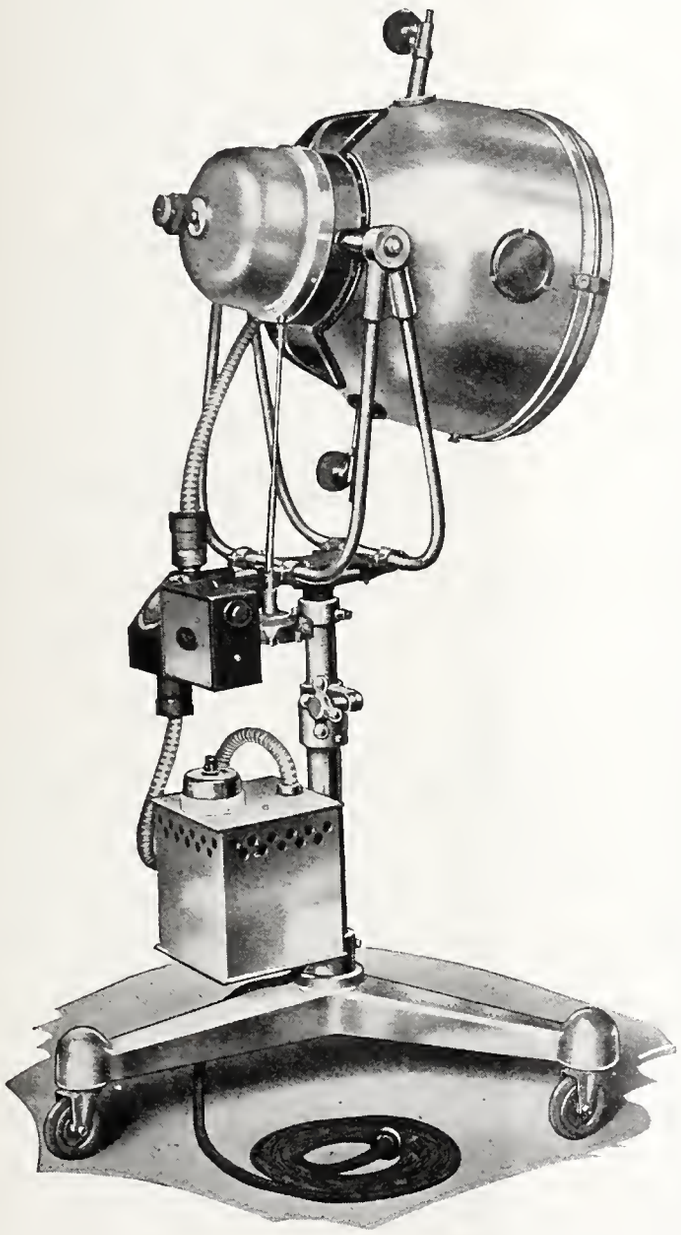

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TRUTH ABOUT MEDICINE

(Continued from Page 706)

radium emanation.—*Jour. A. M. A.,* March 31, 1928, p. 1038.

Ammonium Ichthyolate (Dayton) and Daytol Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that in 1925 it informed the Dayton Chemical Company, manufacturers of Ammonium Ichthyolate (Dayton), that this product could not be accepted because the advertising claims were unwarranted and that the firm took no action to make its product acceptable. From advertising sent out by the Dayton Chemical Company for "Daytol" it is evident that this product is essentially similar to Ammonium Ichthyolate (Dayton) and the Council declared Ammonium Ichthyolate—Dayton and Daytol unacceptable for New and Nonofficial Remedies, because the therapeutic claims made for them are unwarranted. When the report of the Council was sent to the Dayton Chemical Company a reply was received from the Daytol Company, as successor to the Dayton Chemical Company. The firm stated that it wished to make Daytol acceptable for New and Nonofficial Remedies, but that almost two years would be required to secure the needed evidence. The firm gave no indication that its propaganda would be discontinued in the meantime; therefore the Council authorized publication of its report.—*Jour. A. M. A.,* March 31, 1928, p. 1039.

The Kirkpatrick Consumption Cure Fake — One George Kirkpatrick, an obscure veterinarian of Portland, Oregon, exploits a quack consumption cure "Pul-Bro-Tu." The mayor of Portland wrote a letter favorable to the preparation. The city council of Portland decided that a committee should be appointed to investigate the "cure" and the members of this committee were named by the mayor. The committee

(Continued on Page 711)

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TRUTH ABOUT MEDICINE

(Continued from Page 708)

filed a report declaring unanimously that the Kirkpatrick nostrum was "without value in the treatment of tuberculosis and its use, as such, constitutes a menace." When the mayor testified before the committee, he declared, in effect, that his enthusiasm for Pul-Bro-Tu was based on the eulogistic reports he had received regarding the nostrum from Drs. Ralph C. Walker and Carl T. Ross. The committee brought out that Doctor Walker was a stockholder in the Kirkpatrick Remedies Company, and that both Doctor Walker and Doctor Ross profited through their tie-up with the Kirkpatrick outfit.—*Jour. A. M. A.*, March 31, 1928, p. 1041.

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AT THE Commercial Exhibit in connection with the fifty-seventh annual convention of the California Medical Association in Sacramento, April 30 to May 3, only one exhibit of distilled water will be noted. During the past two years the announcements of Puritas Water Division of the Los Angeles Ice and Cold Storage Company have appeared in CALIFORNIA AND WESTERN MEDICINE. In these announcements nothing has been said regarding Puritas Water; the space has been used to present certain facts regarding the physiologic, hygienic, prophylactic and therapeutic value of various types of drinking water.

The consensus of national authorities, as expressed in these announcements, indicates strongly that there are no curative properties or hygienic values in ordinary spring water that are not found in any water of equal sanitary quality; that the presence of mineral salts in drinking water adds no therapeutic quality; that spring water cannot be classed as "pure water" in the scientific sense; and that properly distilled and aerated water has all the health-giving qualities found in any type of water; that such water is pronounced wholesome—the ideal drink—and that the absence of minerals in water does not inhibit bone growth or impair its value in nutrition.

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This Account has no doubt escaped your notice. Will you please favor us with a remittance by return mail and oblige?

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PLEASE REMIT.

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If your circumstances have made it impossible for you to pay the amount due, kindly write us promptly to that effect. Our office will then endeavor to extend all possible courtesies.

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A check to cover your account, which is now considerably overdue, will be appreciated.

Final Notice

In practically all businesses the custom which is generally followed with overdue accounts is to send such to a collecting agency.

Our bookkeeper has nothing in the records of the office to show when you intend to pay the enclosed account. Perhaps the previous statements and reminders may have been overlooked or ignored.

Following the rule of this office, this overdue account will be sent to the collecting agency within ten days if arrangements for its settlement are not made prior to that time.

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When an account is sent to the collecting agency that organization takes full charge of it thereafter.

IN THE "Miscellany" section of the September, 1927, issue of CALIFORNIA AND WESTERN MEDICINE, page 398, appeared an article relating to the "collection of fees." Following this publication, numerous orders for printing the series of gum stickers and notices as shown in the article were received by us. We therefore concluded to stock them.

Since first we put the series on the market as a stock item, the demand has grown so great that we have been compelled to print them in much larger quantities. This volume-printing has enabled us to produce them at a considerable reduction over the first printing and we are pleased to pass the saving on to the profession.

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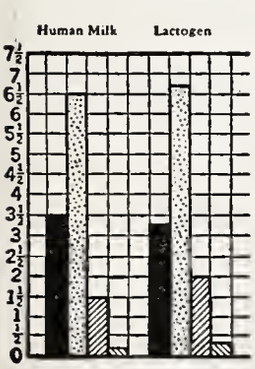

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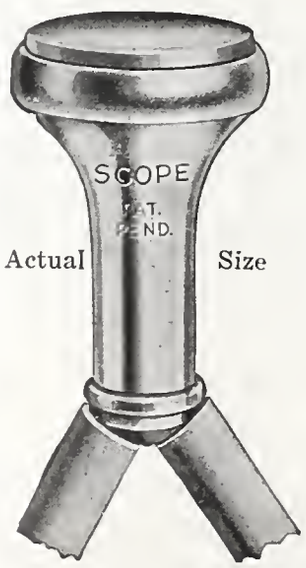

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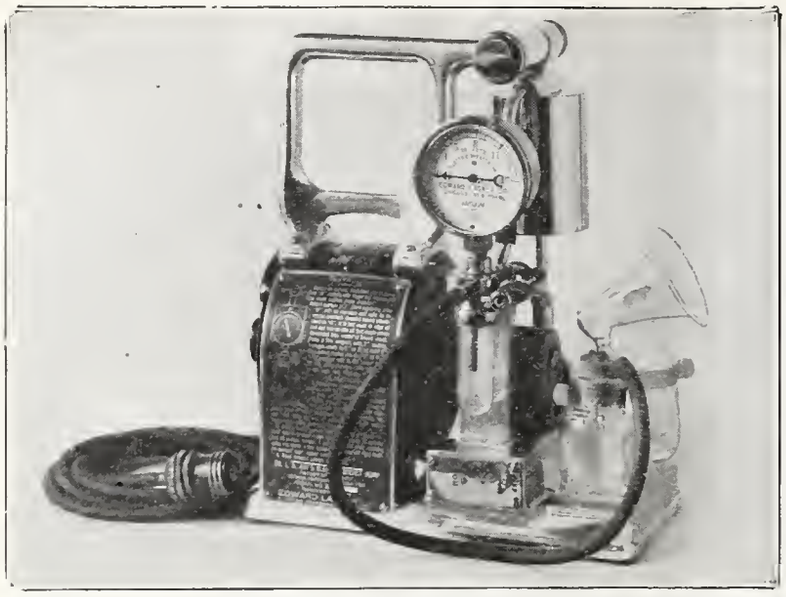

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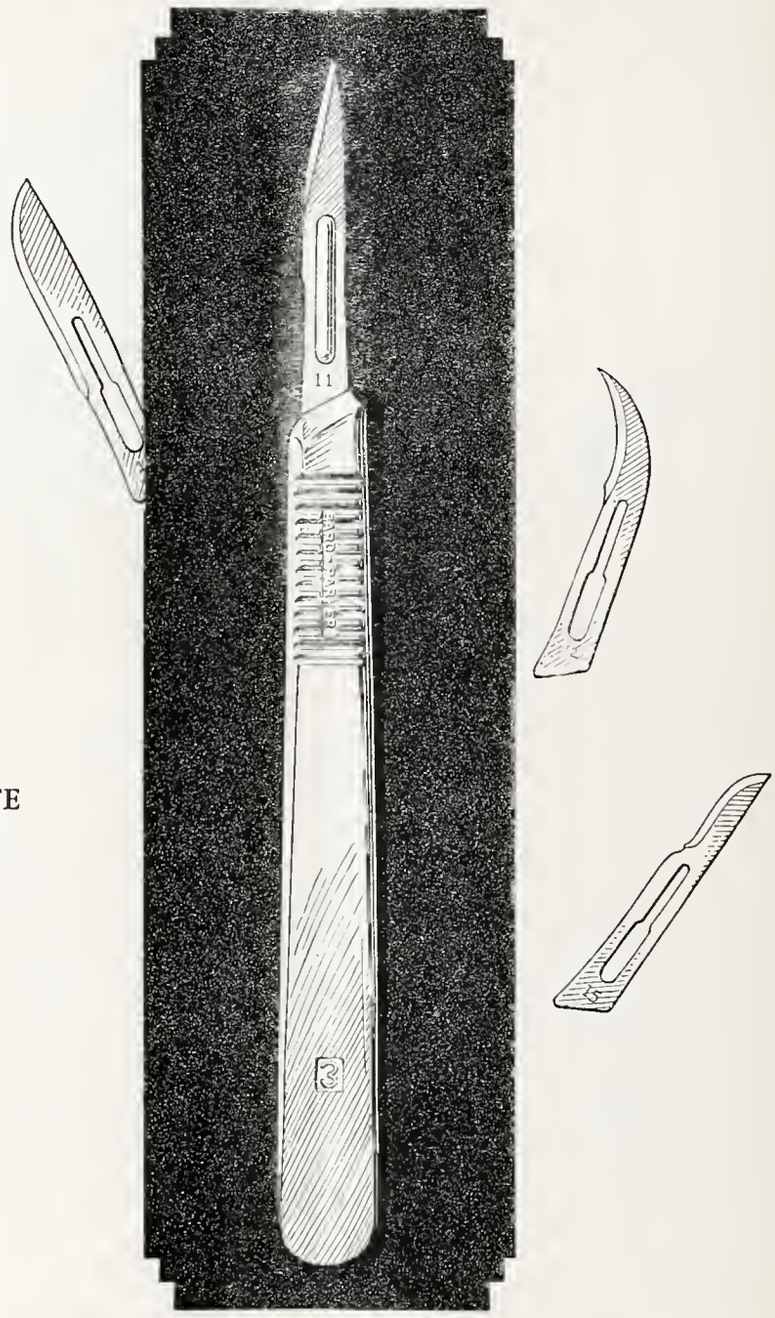

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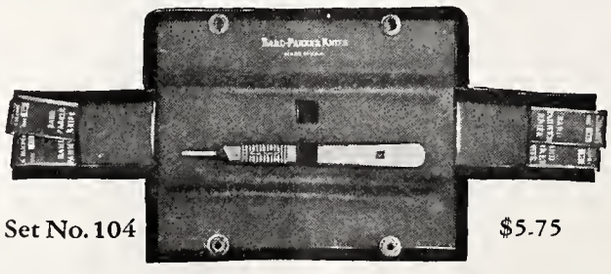

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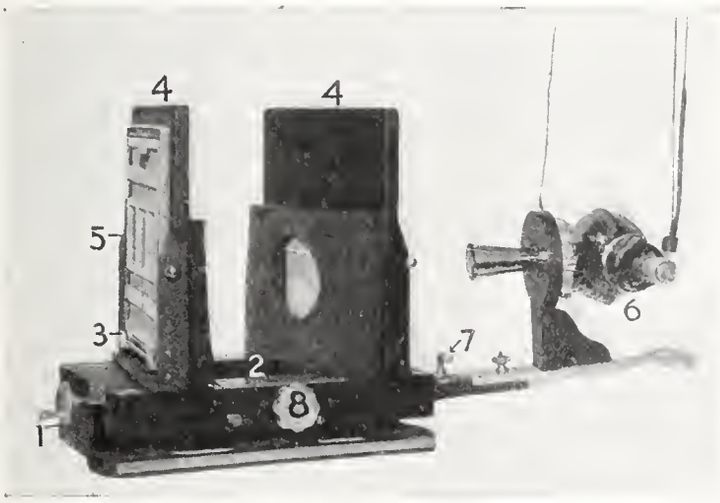

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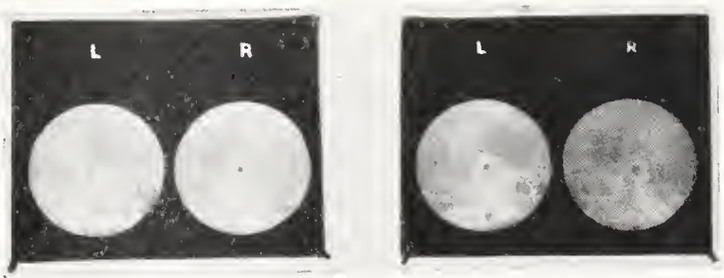

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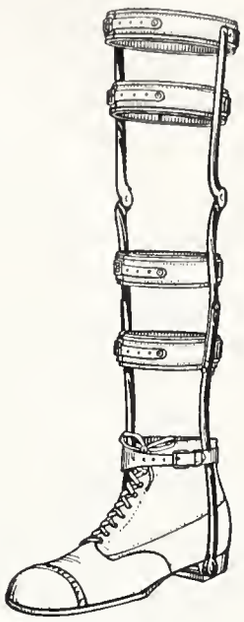

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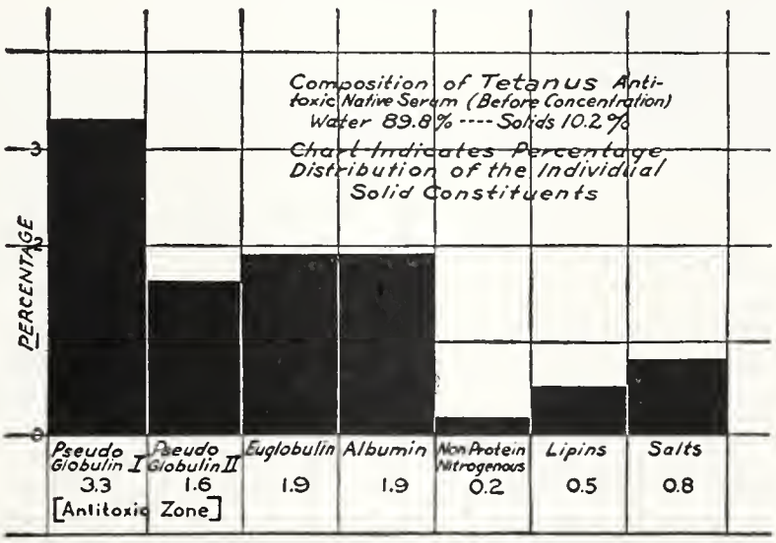

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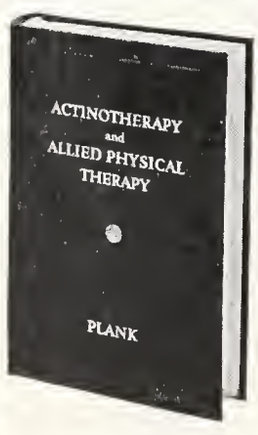

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BOOK REVIEWS

Social Factors in Medical Progress. By Dr. Bernard J. Stern, Department of Sociology, University of Washington, Columbia University Press, New York City. Price, $2.25.

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The Peaks of Medical History. An Outline of the Evolution of Medicine for the Use of Medical Students and Practitioners. By Charles L. Dana. Second edition. Pp. 105. New York: Paul B. Hoeber, 1928. Price, $3.

This small work on a vast subject is not to be read like an ordinary book. It is a guide to medical history, and one admirably conceived for the kind of guide it is intended to be. We have, as a profession, a glorious past and a worthy present, but in the bustle and confusion of the present we are apt to forget or neglect the past, and any book that makes our past more clear and approachable is to be commended.

This small book serves as a string along which can be arranged chronologically the facts of the development of our profession. In order to facilitate its use the author has devised an ingenious diagram of salient and retreating angles illustrating the spasmodic way medicine has advanced throughout history.

If this book is read, as it is advised to be read, with regard to the diagram of the "peaks," and also by frequent reference to the illustrations and their sequence, it will be found to be instructive and entertaining, and a notable help on a long path. D. W. M.

BOOKS RECEIVED

The Principles and Practice of Obstetrics. By Joseph B. De Lee, M. D. With 1128 illustrations on 923 figures, 201 of them in colors. Fifth edition, thoroughly revised. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

Gonococcal Urethritis in the Male. For Practitioners. By P. S. Pelouze, M. D. Illustrated. Review copy by courtesy of the publishers, W. B. Saunders Company, Philadelphia.

A Textbook of General Bacteriology. By Edwin O. Jordan, Ph. D. Fully illustrated. Ninth edition, thoroughly revised. Review copy by courtesy of the publishers, W. B. Saunders Company.

Schizophrenia (Dementia Praecox). An Investigation of the Most Recent Advances, as Reported by the Association for Research in Nervous and Mental Disease. The Proceedings of the Association; New York, December 28 and 29, 1925. Volume V. With sixty-one illustrations. Review copy by courtesy of the publishers, Paul B. Hoeber, Inc., New York.

The Medical Department of the United States Army in the World War. Vol. IX. Communicable and other Diseases. Prepared under the direction of Major General M. W. Ireland, the Surgeon-General, by Lieutenant-Colonel Joseph F. Siler, M. C. Washington: United States Government Printing Office.

Certified Milk. Proceedings of A. A. M. M. C., C. M. P. A. A., C. M. M. C., and M. C. M. P., 1927

A Book for Us Diabetics and Our Doctors By Don H. Duffie, M. D. Review copy by courtesy of the author.

The Ultra-Violet Rays. Their Action on Internal and Nervous Diseases and Use in Preventing Loss of Color and Falling of the Hair. By Arnold Lorand. M. D. Review copy by courtesy of the publishers F. A. Davis Company, Philadelphia.

Studies in the Psychology of Sex. Volume VII. Eonism and Other Supplementary Studies. By Havelock Ellis. Review copy by courtesy of the publishers, F. A. Davis Company, Philadelphia.

The New York Academy of Medicine Lectures on Medicine and Surgery. First Series, 1927. With thirty-nine illustrations. Review copy by courtesy of the publishers. Paul B. Hoeber, Inc., New York.

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The Cheney Chemical Co.—Ethylene (Cheney).

E. Fougera & Co.—Lipiodol (Lafay); Lipiodol Radiologique Descendant; Lipiodol Radiologique Ascendant.

Mead Johnson & Co.—Mead's Powdered Boilable Protein Milk.

Swan-Myers Co.—Ephedrin (Swan-Myers); Ephedrin Inhalant (Swan-Myers).

Winthrop Chemical Co., Inc.—Phanodorn Tablets, 3 grains.

Pollen Extracts (Hollister-Stier)—Liquids obtained by extracting the dried pollen of plants with a liquid consisting of 48 per cent of glycerin, 5 per cent of sodium chlorid and 47 per cent distilled water. For a discussion of the actions, uses and dosage see Allergic Protein Preparations, New and Nonofficial Remedies, 1928, p. 23. Pollen extracts (Hollister-Stier) are marketed in treatment sets of five vials and in treatment sets of thirty vials, representing graduated concentrations. The following preparations have been accepted: Alder Pollen Extract (Hollister-Stier); Aspen Pollen Extract (Hollister-Stier); Atriplex Pollen Extract (Hollister-Stier); Awnless Brome Grass Pollen Extract (Hollister-Stier); Blue Bunch Grass Pollen Extract (Hollister-Stier); Box Elder Pollen Extract (Hollister-Stier); Canada Blue Grass Pollen Extract (Hollister-Stier); Cheat Pollen Extract (Hollister-Stier); Common Sagebrush Pollen Extract (Hollister-Stier); Crested Koeleria Pollen Extract (Hollister-Stier); Dandelion Pollen Extract (Hollister-Stier); Eastern Ragweed Pollen Extract (Hollister-Stier); English Plantain Pollen Extract (Hollister-Stier); Giant Poverty Weed Pollen Extract (Hollister-Stier); Kentucky Blue Grass Pollen Extract (Hollister-Stier); Lamb's Quarters Pollen Extract (Hollister-Stier); Mugwort Pollen Extract (Hollister-Stier); Orchard Grass Pollen Extract (Hollister-Stier); Perennial Rye Grass Pollen Extract (Hollister-Stier); Quack Grass Pollen Extract (Hollister-Stier); Red Top Pollen Extract (Hollister-Stier); Redroot Pigweed Pollen Extract (Hollister-Stier); Russian Thistle Pollen Extract (Hollister-Stier); Sandberg's June Grass Pollen Extract (Hollister-Stier); Sheep Sorrel Pollen Extract (Hollister-Stier); Spring Birch Pollen Extract (Hollister-Stier); Timothy Pollen Extract (Hollister-Stier); Velvet Grass Pollen Extract (Hollister-Stier); Western Ragweed Pollen Extract (Hollister-Stier); Willow Pollen Extract (Hollister-Stier). Hollister-Stier Laboratories, Spokane, Washington.—*Jour. A. M. A.*, April 7, 1928, p. 1116.

B. Acidophilus Milk (Adohr)—A milk culture of *B. acidophilus* which contains not less than 250,000,000 of viable organisms (*B. acidophilus*) per cc. at the time of sale. For a discussion of the actions and uses of bacillus acidophilus preparations see Lactic Acid-Producing Organisms and Preparations, New and Nonofficial Remedies, 1928, p. 228. Laboratory Division of the Adohr Creamery Co., Los Angeles, Calif.

Phanodorn Tablets, Three Grains—Each tablet contains three grains of phanodorn (New and Nonofficial Remedies, 1928, p. 96). Winthrop Chemical Co., Inc., New York.

Solution Ephedrin Sulphate—P. D. & Co., Three Per Cent—A three per cent solution of ephedrin sulphate—P. D. & Co. (New and Nonofficial Remedies,

(Continued on Page 752)

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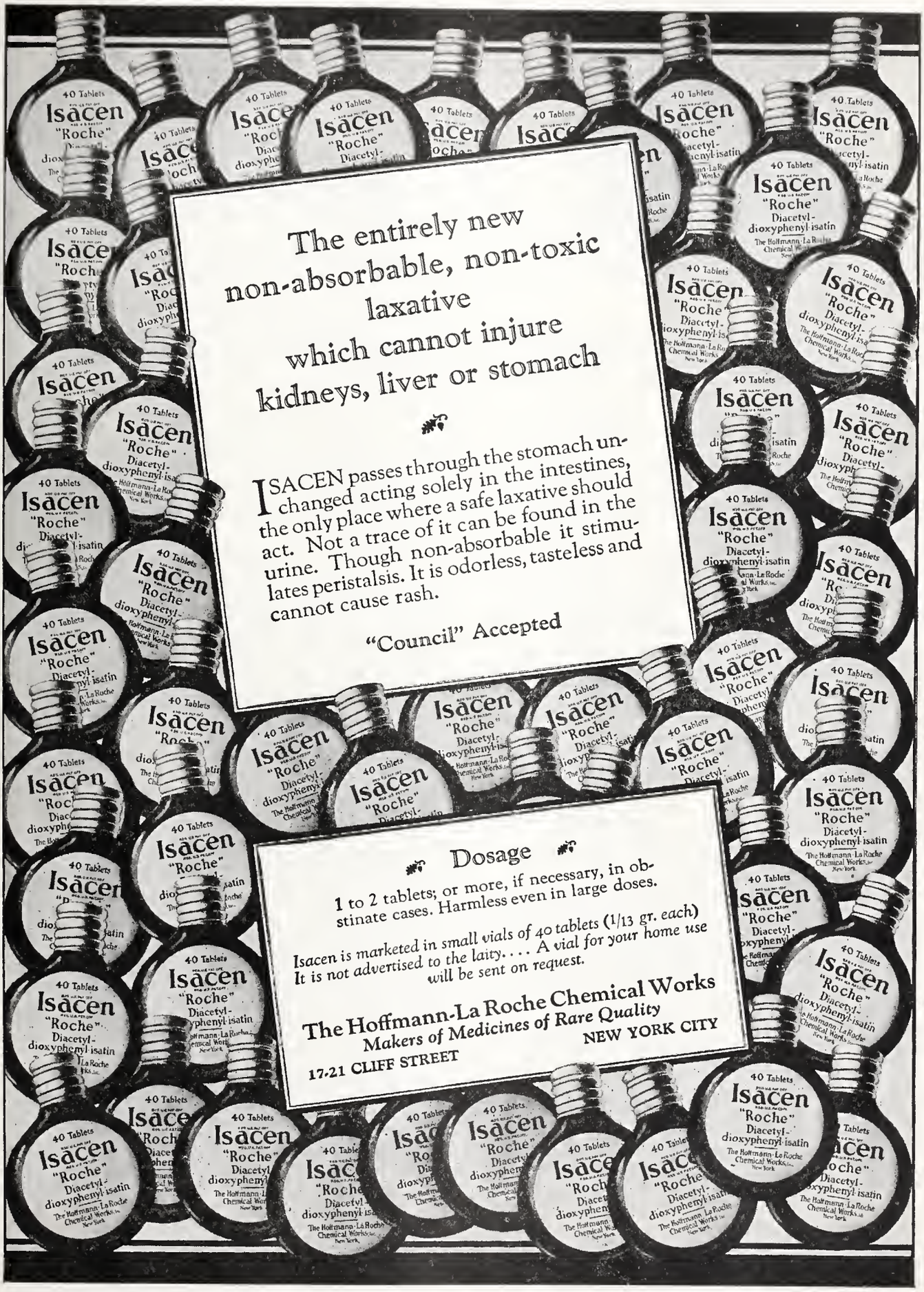

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TRUTH ABOUT MEDICINES

(Continued from Page 750)

1928, p. 178). Parke Davis & Co., Detroit.—*Jour. A. M. A.*, April 21, 1928, p. 1291.

Ephedrin (Swan-Myers)—A brand of ephedrin—N. N. R. (New and Nonofficial Remedies, 1928, p. 174). It is also supplied in the form of Ephedrin Inhalant (Swan-Myers), a 1 per cent solution of ephedrin in light liquid petrolatum.—*Jour. A. M. A.*, April 28, 1928, p. 1377.

PROPAGANDA FOR REFORM

Clauden Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Clauden, manufactured by Luitpold-Werk, Munich, Germany (East Brook, Inc., New York, distributor), is claimed to be a harmless, efficient and superior hemostatic for local, oral, hypodermic and intravenous administration. On the basis of the evidence presented by the manufacturer and distributor, the Council found Clauden unacceptable for New and Nonofficial Remedies because its potency and keeping qualities are not controlled; because the labels and advertising contain no caution of the possibility of anaphylactic reaction from foreign protein; and because the claims advanced for it are unwarranted.—*Jour. A. M. A.*, April 7, 1928, p. 1116.

Kalzan Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that Kalzan is the name applied to a double salt of calcium and sodium lactate manufactured by Johann A. Wulfing, Chemical Works, Berlin (The Wulfing Co., Inc., New York, distributor). The product is claimed to have none of the irritating properties of calcium chlorid and to possess the advantage of being more readily retained in the tissues than ordinary calcium lactate. This is claimed to be due to the presence of the sodium lactate, which is claimed to increase the alkalinity of the blood and to enhance the ability of the tissue cells to hold the absorbed lime. These claims the Council held not to be substantiated by acceptable evidence. The Council held Kalzan unacceptable for New and Nonofficial Remedies because it is an unoriginal compound marketed under a proprietary, nondescriptive name; because the therapeutic claims advanced for it are unwarranted, and because its use is irrational and unscientific in that this double salt of calcium lactate and sodium lactate is of a lesser therapeutic value than calcium lactate alone.—*Jour. A. M. A.*, April 7, 1928, p. 1117.

Hart's Alimentary Elixir of Beef Not Acceptable for N. N. R.—This product generally referred to in the advertising as "Hart's Elixir" is stated by E. J. Hart & Co., Ltd., to have the following composition: total solids, 20.75 per cent, total proteids (peptones, albuminoids), 2.65 per cent; carbohydrates, 12.0 per cent; alcohol, by volume, 19.5 per cent; sodium glycerophosphate, to each fluid ounce, 6 grains; potassium glycerophosphate, to each fluid ounce, 6 grains; preservatives used, alcohol and glycerin. This preparation belongs to the class of liquid medicinal foods which the Council on Pharmacy and Chemistry has omitted from New and Nonofficial Remedies because their usefulness in present-day dietotherapy lacks substantiating evidence. It is "fortified" with glycerophosphates, which are now generally considered of little therapeutic value. It is marketed under a name which is therapeutically suggestive, with claims that are extravagant and misleading, and in a way to lead the public to depend on it for nourishment which it does not contain. The Council declared Hart's Alimentay Elixir of Beef unacceptable for New and Nonofficial Remedies.—*Jour. A. M. A.*, April 7, 1928, p. 1117.

The Wright Tuberculosis Treatment—A Mrs. Carrie Wright was in the "consumption cure" business at Corinth, Miss., under the names "Wright Tuberculosis Healthtorium" and "Carrie Wright T. B. Foundation." Carrie Wright was the wife of one Charles O. Wright, who had been engaged in "consumption cure"

(Continued on Page 754)

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TRUTH ABOUT MEDICINES

(Continued from Page 752)

quackery for years. The nostrum was sold under various trade names: "The Dr. C. O. Wright Co.," "Wright Ricks Drug Company," "Wright-Duering Antitoxine Company," "Wright Chemical Company," and probably others. The A. M. A. Chemical Laboratory analyzed a specimen of the "Wright's Tuberculosis Treatment" obtained from Corinth, Mississippi, and also a specimen of "Wright's Tubercular Remedy" from the Carrie Wright Foundation at Chicago. From its tests the laboratory concluded that the first preparation is essentially a water-glycerin solution to which caramel has been added and that the second specimen appeared to be identical with the first.—*Jour. A. M. A.*, April 7, 1928, p. 1141.

Epilepson—"Epilepson," described in the advertising as an "amazing discovery" which "stops epileptic attacks at once," has been put on the market by the Epilepson Company, Inc., of Brooklyn, New York. Later the name of the concern seems to have been changed to the Remedy Products, Inc., of New York City. An examination of Epilepson in the A. M. A. Chemical Laboratory showed that it was essentially phenobarbital (luminal).—*Jour. A. M. A.*, April 7, 1928, p. 1141.

Terpezone Not Acceptable for N. N. R.—The Council on Pharmacy and Chemistry reports that according to the information of the Knox Terpezone Co., "Terpezone" is produced by passing a mixture of ozone and pinene vapor through a "combined chemo-electrical generator of a highly specialized nature." The Council further reports that "Terpe-

(Continued on Page 756)

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TRUTH ABOUT MEDICINES

(Continued from Page 754)

zone" is claimed to be a pinene ozonide, but that the firm's positive statement in regard to the composition of Terpezone is not warranted. The Council reviews the evidence for the therapeutic value of treatment with "Terpezone" and finds that this is not acceptable. The Council was obliged to declare Terpezone unacceptable for New and Nonofficial Remedies because no satisfactory evidence is presented to show that Terpezone is pinene ozonide or that in the manufacture of the product the formation of injurious by-products is controlled or prevented; because the claimed harmlessness of the product is not established, and because it is marketed with unwarranted and exaggerated claims of therapeutic value.—*Jour. A. M. A.*, April 14, 1928, p. 1197.

Orlando Edgar Miller—Recently a Canadian paper reported that the question of deporting "Dr" Orlando Edgar Miller was being considered by the Canadian authorities. For the past few years Miller's line has been "applied psychology" and motion picture company promoting. In the early nineties Miller was running a "rupture cure" concern. Subsequently he is reported to have exploited a "medicated sand treatment" as a "sure cure for dyspepsia." Then he organized the "St Luke's Society," to exploit a "cure" for drug addiction. His next venture was a combination "university" and "sanitarium." Then he founded the "International Institute for the Treatment of Tuberculosis" and later transferred his activities to Europe. In 1920 Miller was back in America as the "Affirmative Apostle of Intense Individuality." He went to California in 1921 and organized a motion picture concern known as the "Rellimeo Film Syndicate." In 1925 he was reported under investigation by the grand jury of Boston as a promoter of the "Temple of Psychology." Buffalo papers then reported his arrest on the charge of grand larceny. In January, 1927, two

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warrants were issued against Miller, one charging embezzlement and the other charging violation of the state corporate securities law of California—*Jour. A. M. A.,* April 14, 1928, p. 1235.

Use of Lens Antigen in Cataract—The successful cure of cases of incipient cataract by the injection of lens antigen as proposed by A. E. Davis is yet to be reported. In 1924 the Council on Pharmacy and Chemistry considered the evidence available and found it insufficient to permit recognition of the product. In the six years that have elapsed since lens antigen was first proposed for use in the treatment of cataracts there has been no scientific corroboration of Davis' alleged results.—*Jour. A. M. A.,* April 14, 1928, p. 1239.

The Physiologic Potency of Activated Sterols—Experiments indicate that about twenty billionths gram of vitamin D is sufficient to produce chemical deposition in a rachitic rat. It has also been reported that ten millionths gram of irradiated ergosterol daily is sufficient to promote the healing of rickets in rachitic rats.—*Jour. A. M. A.,* April 21, 1928, p. 1295.

Annual Meeting of the Council on Pharmacy and Chemistry—Among the questions considered, those of special interest to the medical profession were: It was decided to coöperate with the Committee of Pharmacopeial Revision in studying the activity of a digitalis preparation for hypodermic use offered for the Pharmacopeia. It was decided that unless new evidence develops, to exclude all digestive enzyme preparations from New and Nonofficial Remedies with the close of 1929. It was decided to omit all desiccated pituitary preparations from New and Nonofficial Remedies with the close of the longest period for which any such preparation now stands accepted, unless before then new evidence for their value becomes available. The Council discussed the available evidence for the value and rationality of a mixture of a barbital compound, marketed as such and found acceptable, with an analgesic such as amidopyrin, provided such a mix-

(Continued on Page 759)

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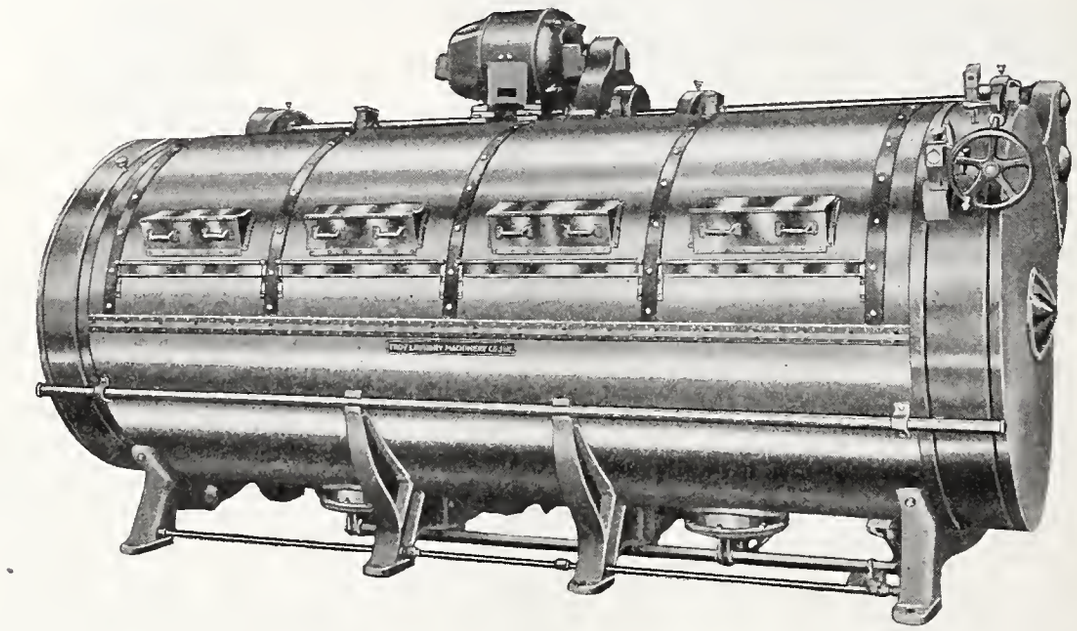

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TRUTH ABOUT MEDICINE

(Continued from Page 757)

ture is marketed under a name descriptive of its composition and the claims made for it are supported by acceptable evidence. The Council voted to recommend to the Board of Trustees that the distribution of New and Nonofficial Remedies to medical classes be resumed. It was decided to ask the general manager to mark distinctively in the American Medical Directory those journals which will promise to limit their advertising of proprietary medicines to those accepted for New and Nonofficial Remedies. The Council proposes to offer its coöperation with a view to examining all food preparations (except natural foods in their natural state) proposed for advertising in A. M. A. publications. The Council considered the question of the importation of non-narcotic drugs now barred by the Narcotic Drug Import and Export Act.—*Jour. A. M. A.*, April 28, 1928, p. 1377.

Remedies for Seasickness—It has been reported that sodium nitrite is of value in the treatment of seasickness. A support of this method comes in a report that glyceryl trinitrate—which acts as a nitrite—was found to prevent and cure seasickness.—*Jour. A. M. A.*, April, 28, 1928, p. 1381.

AL-14.—The widely advertised "patent medicine," "Formula AL-14," is marketed by the American Chemical Company of Pittsburgh, which was previously known as the Research Laboratories of Pittsburgh. The American Chemical Company has exploited three products: "RA-3," "RA-9," and "AL-14." The first was for mental exhaustion and aphrodisiac effects were ascribed to it. The second was said to be similar to RA-3 except that it was for women. AL-14 is claimed to be "an insurance against Colds, Flu and Pneumonia." The A. M. A. Chemical Laboratory reports that a package of the preparation contained twenty-four small oiled paper envelopes. Twelve carried directions printed in red and the other

(Continued on Next Page)

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TRUTH ABOUT MEDICINES

(Continued from previous page)

twelve carried directions printed in blue; one of the envelopes contained citric acid and the other one a mixture of bicarbonate which, when added to water, effervesces, yielding a solution having as its essential constituents citrates of potassium and sodium, together with a trace of a calcium salt and a small amount of unneutralized citric acid.—*Jour. A. M. A.*, April 28, 1928, p. 1394.

Lasker Foundation for Medical Research—Mr. and Mrs. Albert D. Lasker have given an endowment fund of $1,000,000 for medical research on the prevention and cure of the degenerative diseases of persons of middle age. The institution is to be known as the Lasker Foundation for Medical Research.—*Bull. Association of Am. Med. Colleges.*

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Endowing Young Talent—In the January issue we discussed the fact that in the past course of medical progress the world's best work has been done in the main by young men, which has led Dr. James J. Walsh to question whether the long period of training that we exact today may not partially sterilize our youth. The late Mrs. John Innes Kane has bequeathed a million dollars for the creation of eight orthopedic fellowships to be awarded each year to promising interns, which will give them from three to five years of added opportunity for original work, free from economic strain. This is a good move, and will doubtless initiate similar endowments on the part of others. It shows recognition of youth as the most promising source of progress, although, as we pointed out in our earlier editorial, the great pathfinders of the past began their creative work much earlier than the men of today enter upon their vocation.—*Med Times.*

High Blood Pressure—The term "high blood pressure" has been so often used apart from its context that it is being bandied about now as if it were an entity and the "village gossip" uses the term as glibly as if she were describing the weather, generally with a lift of the eyebrows indicative of superior intelligence and the obvious intent to prepare the listener for the worst. It was refreshing therefore to hear Sir Humphrey Rolleston discuss the subject of its true significance. Were the present tendency to popularize the symptom to continue it would not be long before every housewife would want some sort of an apparatus for taking pressures, a habit which would be even more banal than that of possessing a clinical thermometer. The truth of the matter seems to center about two or three points. In the first place high blood pressure is of consequence largely because it reflects certain underlying conditions which may be serious, of and by themselves. In the second place many people are "set" for a pressure which runs

(Continued on Page 766)

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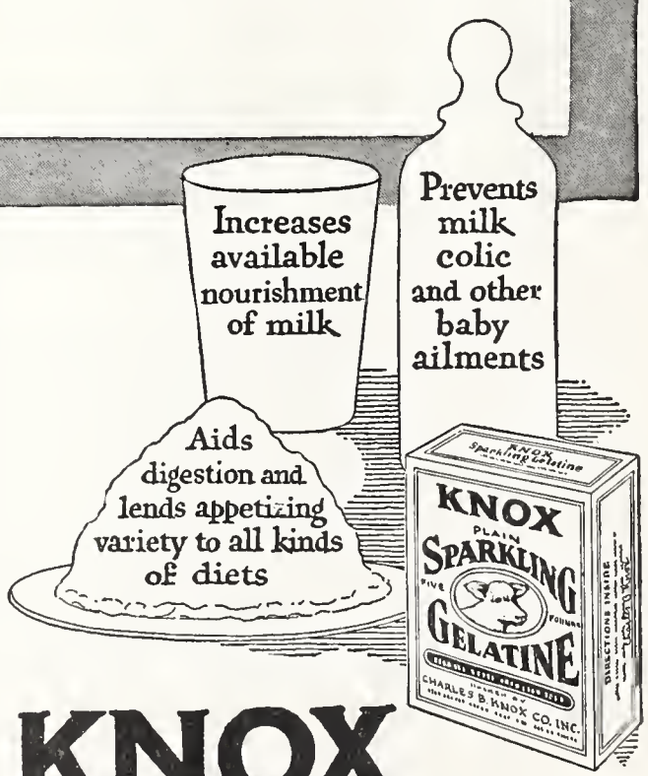
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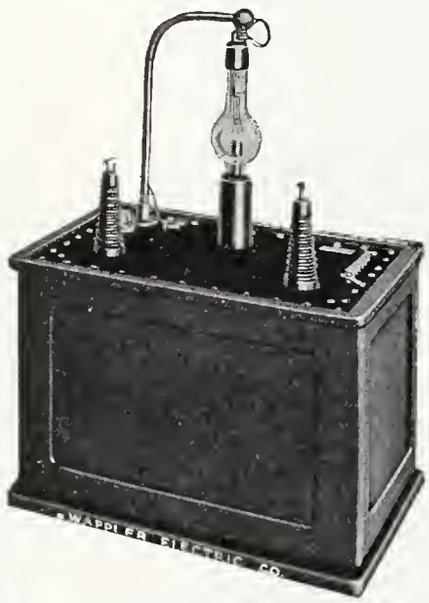

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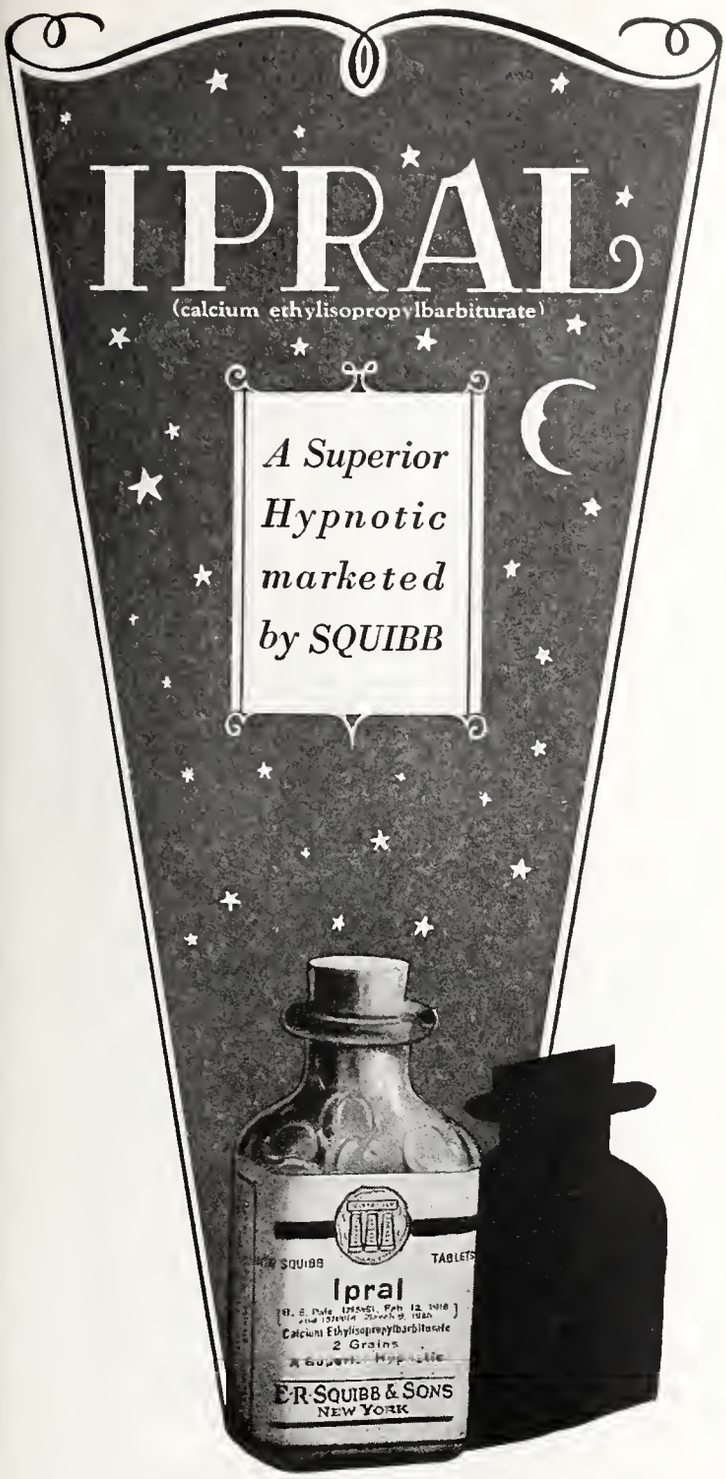
(Continued from Page 762)

higher or lower than the average and for them that pressure is the norm. In the third place it is probable that certain pressures which, for the individual, are well above the normal are adaptations designed to meet pathological conditions in organs of the body whose function is concerned with the elaboration from the blood stream of certain elements of metabolic waste. This was pointed out many years ago by Cohnheim.—*New England J. Med.*

Results of Tobacco Abuse—Although many heavy smokers live to old age and show no apparent ill effects from their habit, still other individuals suffer definite harmful results from only moderate smoking. The explanation is that the poisonous effects of nicotine are insidious, and furthermore there are marked differences in individual susceptibility to this toxic drug.

A considerable number of serious disturbances are justly attributed to the abuse of tobacco. Cardiac irregularities, arteriosclerosis, digestive complaints, cancer of the lip, leukoplakia buccalis, chronic pharyngitis, spastic constipation, the duodenal ulcer syndrome, toxic amblyopia, deafness, and premature aging, due to thyroid exhaustion are some of the established indictments against nicotine.

The curtailment of the abuse of tobacco should constitute an important part of preventive medicine. A national prohibition of tobacco would be undesirable, as it would only foster wholesale tobacco bootlegging. The most promising method of lessening the evils of tobaccoism would be to spread educational propaganda informing the public of the true facts with regard to the influence of nicotine on the body. In this respect it is unfortunate that so many physicians, fully realizing the toxicity of nicotine, expect their patients to desist from tobacco while they themselves smoke freely at the very moment of giving this advice.



SLEEPLESSNESS, as a symptom, occurs in a great variety of cases. Unfortunately, most hypnotics lose their effectiveness quickly, and the dosage must be increased. IPRAL has been given to a great many individuals for the past several years, and so far it has been found necessary, in but very few cases, to increase the usual 4-grain dose to 6 grains. IPRAL is of particular advantage in mental or nervous cases attended with prolonged loss of sleep; its use in such cases has brought about apparently natural sleep, and has quieted the nervous symptoms to a great degree.

IPRAL is of value in treatment of drug habituation. One of the characteristics of this superior hypnotic is the fact that it not only produces sleep the night it is administered, but its sedative action persists so that as a rule the patient sleeps also on the following night, without additional medication. A patient who has previously found it necessary to resort to hypnotics is not only greatly improved, but highly elated when he finds that he is able to do without a hypnotic even for one night.

DOSAGE

As a sedative, or for ordinary insomnia, one or two IPRAL TABLETS (*2 to 4 grains*) are usually sufficient; as a hypnotic, two tablets (*4 grains*) are usually effective, although, according to Jackson and Lurie, as much as 15 grains may be given with absolute safety.

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3. Patients have the advantage of modern laboratory aids to diagnosis and of all modern therapeutic agencies.

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CALIFORNIA
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VOLUME XXVIII JUNE, 1928 No. 6

"UNITED WE STAND, DIVIDED WE FALL."

SALUTATION OF THE PRESIDENT-ELECT
CALIFORNIA MEDICAL ASSOCIATION,
FIFTY-SEVENTH ANNUAL
SESSION

By W. H. KIGER, M. D.
Los Angeles

THE caption for these remarks is the motto of one of the states of the Union, and I shall use it as the text for my remarks. It is a slogan which members of our own and other state medical societies may well take to heart. Its sentiment bases itself upon solidarity of all society and organization work of whatsoever kind. Municipalities, counties, states, and nation, all found much of their prosperity upon its application. Social conditions everywhere are guided by it. Family ties are controlled by it, for a family divided against itself does not usually survive. The business world would be in a chaotic state if it were not held together by its cohesive quality. Franklin gave expression to an analogous thought when he warned the signers of the Declaration of Independence in these words: "We must hang together, or we shall hang separately."

Because in our own country, some seven decades ago, we failed to adhere to this warning there came upon our land one of the most bitter wars that the world has ever witnessed, and one that came very near disrupting this union of states. Corporations, trade-unions, religious bodies and organizations of all kinds would go to pieces if the members were not bound together by this sentiment of union.

Few professions are buffeted about, abused, vilified, and at times seemingly as unappreciated as is the medical profession. The public, whom we often serve without pay or even expectancy of reward, often fails to grant us even an honorable recognition. The main effort of our profession, in our studies, research and work application, is to serve the public and to protect it from the ravages of disease and pestilence, in order that health and life may be conserved, to the end that all of us may be useful citizens of our country.

It is a well-established principle that "credit should be given where credit is due," but witness the case, for instance, of Walter Reed, who gave his life to demonstrate the cause of yellow fever, and who by his discovery saved the lives of perhaps millions of people and untold millions of dollars. Only a little credit did he receive outside his own profession—a hospital named after him, and his widow, after several years, given a modest pension of $150 a month. Gorgas, who applied Reed's discovery and made possible the building of the Panama Canal, after the French had spent millions of dollars and thousands of lives in fruitless effort, lies not unhonored, but almost unsung; and it is left to his profession to erect a proper testimonial to his memory. I could call your attention to the shafts and tombs of our illustrious dead—Lincoln, Garfield, Grant, and others. It would be a poor citizen indeed who would have withheld a single dollar spent by our government in erecting these. Yet in a little churchyard in Danville, Kentucky, lie the bones of a physician, greater in the good that he brought to humanity than many of the statesmen and soldiers whose names are honored throughout the world; and thousands and thousands of women, in this country and Europe, owe their lives and happiness to the efforts of Ephraim McDowell.

When each of us graduated in medicine and entered the profession, we enlisted for life. We compose an army to fight for the perpetuation of the human race and to establish good health and happiness for all mankind, rich or poor. To this end we are bound together by the oath of Hippocrates as it has come down to us through the ages. Let us add to this oath the admonition of the Master, to "Love one another." Let us gird ourselves in such armour that we will be prepared against attack from whatsoever source, and let us at all times stand ready at a moment's call to go to the rescue of the unfortunate brother who may be in distress.

I once heard a friend give three reasons why he never argued a question with any man: first, it never gets you anywhere; second, it might cause enmity; and third, the other fellow might be right. "A hair perhaps divides the false from the true." Waste not your hours in vain pursuit of this and that endeavor and dispute. Let us avoid all useless arguments, and prove to the world that the profession of medicine is comprised of a democracy of intelligence, universal in scope, knowing no boundaries of creed or nation.

In our quiet moments let us recognize that our fellow practitioners are our friends, not our enemies, that their causes are our causes and that they have and are journeying over the same rough road that we have traveled or have yet to pursue. Do not believe nor act upon the tales or falsehoods which meddlesome people tell you about your brother doctors. Even patients will sometimes do this for an evil purpose. We are all working in the same great fields, and are and should be actuated by the same altruistic feelings, and this is true whether our lot be cast in rural or in urban communities.

It is to be remembered that some of the greatest achievements in our profession came from and were accomplished by physicians living in small country towns, as witness McDowell, Benjamin

Dudley and a host of others. The first hip-joint amputation was done by a country doctor, Brashear of Bardstown, Kentucky, living in a village of two hundred persons.

Dr. Crawford W. Long, in a small town in the state of Georgia, deserves credit for that great blessing, general anesthesia. Dr. William Beaumont, in Mackinac Island in Michigan, gave the world his studies in the physiology of gastric digestion, in such classic form that his conclusions are still referred to in the literature. These are only a few of our American physicians from smaller communities who have given to us a heritage of achievement in which we can all take pride.

Since specialists have sprung into existence it is now recognized that they were born of a necessity and demand. Today all well-trained specialists recognize the fact that the tree of general medicine, from which their specialties sprang, is the parent stem, and that their own specialties are only branches of the tree.

In the midst of the present social upheaval one may well wonder what position the physician will eventually occupy in the scheme of things. Our ultimate place will largely depend on our own conduct and good judgment. We should take lessons from other guilds and pin our faith on our organizations. If we are to assume a leadership such as is necessary to medical progress, we must evolve an outline of action and a constructive program, to be followed and worked for in unity and harmony.

State medicine, governmental medicine, socialized medicine—call it what you will—may continue to expand and develop until the majority of the physicians and the people as well will become elements in the vast governmental machine. The field wherein we can do most good in maintaining the highest scientific standards is found in our medical associations—county, state and national. Let us make these organizations stand for the exposition of the highest type of medical thought and action, and as a solid phalanx against opposition and slander. Let me bespeak of you the utmost fidelity to these three types of organizations since thereby you will show your interest in the welfare of your profession, your brethren, and in your own self.

Recognizing that life is short and opportunities few, let us do our full duty to each other and the world at large. Let us be up and doing while we may. Let us cultivate friendly feelings for each other. Let us bar dissension from among us. Then will all be well.

What does our individual coming or going amount to with the world? No more than the pebble on the beach amounts to the sea that cast it there. Let us not procrastinate, for procrastination is the thief of time and, as far as we are concerned, "time is, time was, but soon time will be no more." "The moving finger writes and, having writ, moves on." Wherefore I repeat again that, we to be of most service to humanity, to our profession and to ourselves, "united must stand, lest divided we fall."

523 West Sixth Street.

EMETIN—ITS EFFECT ON THE RABBIT'S HEART*

RESEARCH PRIZE ESSAY—1928

By PHOEBUS BERMAN, M. D.
AND
WILLIAM H. LEAKE, M. D.
Los Angeles

MYOCARDIAL failure associated with the therapeutic use of emetin is not unknown. This condition probably occurs more frequently than the reports indicate, as emetin and its salts are widely used in the treatment of amebiasis and other protozoan infections. It was thought that an electrocardiographic study of the effect of emetin on the rabbit's heart might reveal some interesting findings.

REVIEW OF THE LITERATURE

A search of the literature reveals only a few articles dealing with the effects of emetin on the heart. Young and Tudhope[1] working with toads, rats, hens, rabbits and guinea pigs found, among other things, that emetin is a protoplasmic poison, acting equally on all tissues, heart failure being the actual cause of death. Pellini and Wallace[2] in determining the pharmacology of emetin confirmed Podwyssotzki's findings of the effects of emetin on the frog's heart. The application of a few drops of a one per cent emetin solution to an exposed frog's heart induced a typical picture of heart block. There was first noted a progressive slowing in the rate of contraction of both auricle and ventricle. Later an occasional dropping out of a ventricular beat occurred, and then a complete dissociation, the auriculoventricular rhythm being 2 to 1, then 3 to 1, 5 to 1, etc. Finally the ventricular contractions stopped; the auricle continued to beat for a considerable time. Pellini and Wallace found that the turtle's heart behaved in a similar manner. The cardiac weakening and the fall in blood pressure were not influenced by either cutting the vagi or by the administration of atropin. The conclusion, therefore, was reached, that the action was on the heart muscle and not on the vagus. The myocardiographic tracing was found to be identical to that obtained with chloroform or other cardiac depressants.

Walters and Koch[3] determined that the lethal dose of emetin in rabbits when given intravenously was 0.005 gm. per kilo body weight. They found that emetin has a cumulative action; one-half the minimal lethal dose repeated daily subcutaneously was fatal when an amount equivalent to two and one-half times the minimal lethal dose was given. The minimal lethal dose for man was calculated to be one grain daily for twenty-one days. They concluded that emetin is not a very toxic alkaloid when given in single doses,

* This paper was awarded the State Association Research Prize of one hundred and fifty dollars at the Fifty-seventh Annual Session of the California Medical Association, April 30-May 3, 1928.

* From the Electrocardiographic Laboratory of the Los Angeles General Hospital.

but is dangerous when given repeatedly in small doses over a considerable period of time.

Vedder[4] states that the minimal fatal dose of emetin for rabbits when given intravenously is 2.5 mg. per kilo of body weight.

Daily doses of 5 mg. (3 to 4 mg. per kilo) were found to be uniformly fatal for rabbits in five to six days by Levy and Rowntree.[5] Necropsy revealed but slight anatomical changes. These investigators state that the effect of intravenous injections depends on several factors; (1) the quantity injected; (2) its dilution; (3) the rate of injection; and to a lesser extent, (4) the preparation employed; and (5) the individual susceptibility of the animal.

In some of the animals a remarkable cardiac arrhythmia was observed. There was a sudden transition from the normal kymographic tracing to one showing wide irregular sweeps. Electrocardiographic studies have shown that this irregularity is due to a coarse type of ventricular fibrillation.

Levy and Rowntree observed the mechanism of cardiac death through a median thoracotomy. There was at first generalized fibrillation of both auricles and ventricles. The auricles then ceased to contract, becoming engorged and dilated. The ventricles continued to fibrillate for a time; finally only the left ventricle near the apex of the heart continued in this fashion. Fibrillary contractions persisted for five to ten minutes after the heart had ceased beating.

In cats and rabbits pathologic changes are slight and inconstant.

Levy and Rowntree's pharmacologic and pathologic findings are quite in accord with those of previous investigators. By electrocardiographic studies it has been shown that the cardiac irregularity produced in emetin poisoning is due to fibrillation of the ventricles from which the animal may recover.

TECHNIQUE

The apparatus used by us in the following experiments was a No. 1 Hindle electrocardiograph. The speed of the camera was increased so that the sensitized paper traveled three times the usual rate. The electrodes were made of block tin and were of a size suitable for the rabbits' extremities. With the exception of the control records taken prior to the administration of emetin, Lead II was used unless otherwise specified. Emetin hydrochlorid, Burroughs, Wellcome & Company, in ampoules containing gr. 1/3 to each cubic centimeter was used for the entire series unless otherwise indicated.

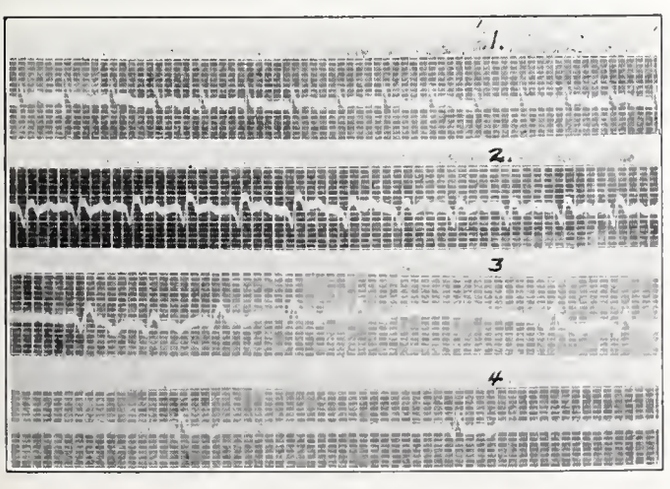

Fig. 1—Rabbit No. 5.

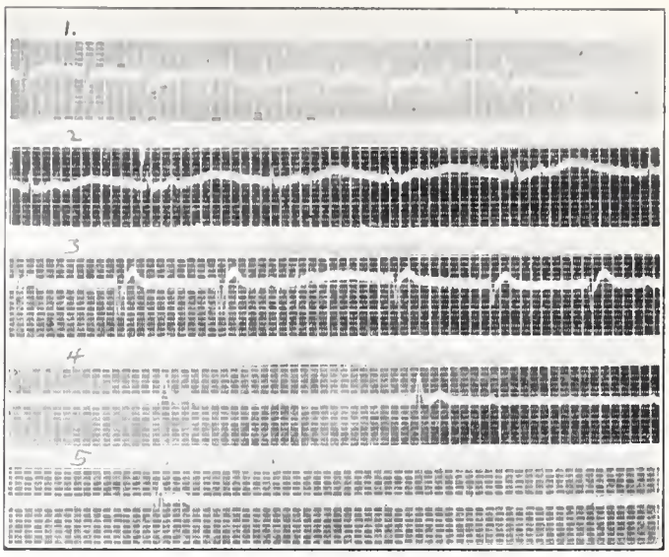

Fig. 2—Rabbit No. 6.

OBSERVATIONS

Rabbit No. 5. Weight 6 pounds.

Electrocardiogram following gr. 1 emetin hydrochlorid intramuscularly.

In this experiment a large dose of emetin was given to produce a reaction that would show definite changes in the electrocardiogram.

1. Normal.
2. Record No. 6—26 minutes after emetin.
3. Record No. 16—76 minutes after emetin.
4. Record No. 16—76 minutes after emetin, rabbit clinically dead.

The rabbit was clinically dead at the end of seventy-six minutes.

Rabbit No. 6. Weight 5 pounds.

In this experiment the purpose was to obtain an electrocardiogram of a dying heart following the administration of a toxic drug not primarily a cardiac poison. Sodium cyanid 15/100 gr. was given intramuscularly.

1. Normal—before injection.
2. Record No. 1—one and half-minutes after injection.
3. Record No. 4—seven minutes after injection.
4. Record No. 23—nine minutes after injection.
5. Record No. 25—twelve minutes after injection.

Rabbit ceased breathing four and one-half minutes after injection.

Rabbit No. 7, C. June 22, 1927. Weight 3½ pounds.

This rabbit was given 1/12 gr. emetin hydrochlorid intravenously. One-half minute later a convulsion occurred.

1. Lead II, before emetin.
2. Record No. 2—one-half minute after injection.

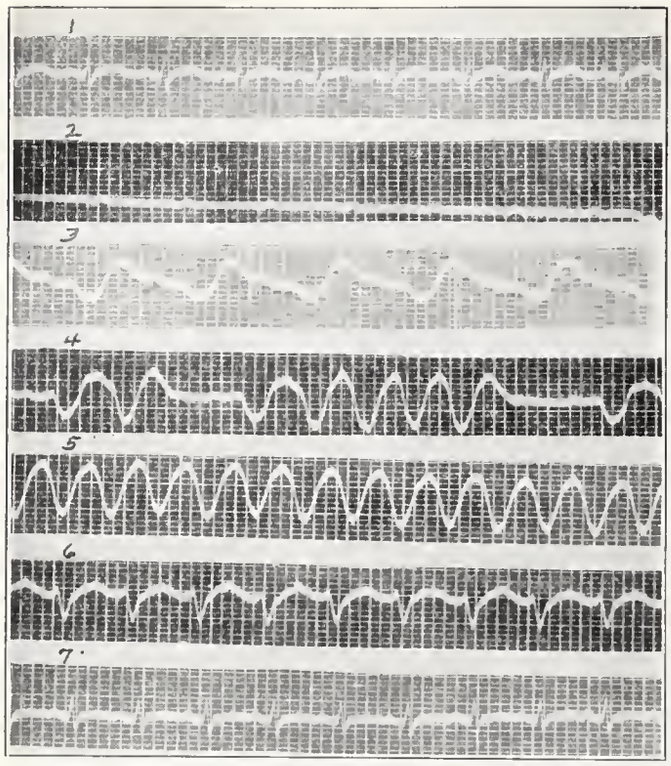

Fig. 3—Rabbit 7, C.

3. Record No. 2—continuation of above.
4. Record No. 2—five minutes after injection.
5. Record No. 2—eight and one-half minutes after injection.
6. Record No. 2—eleven minutes after injection.
7. Record No. 3—thirty-three minutes after injection, apparently a normal record.

Rabbit No. 7, D. Weight 3¾ pounds. Twenty-one days later. The same rabbit was used. One-twenty-fourth gr. emetin hydrochlorid given intravenously. There was an immediate change noted in the electrocardiogram.

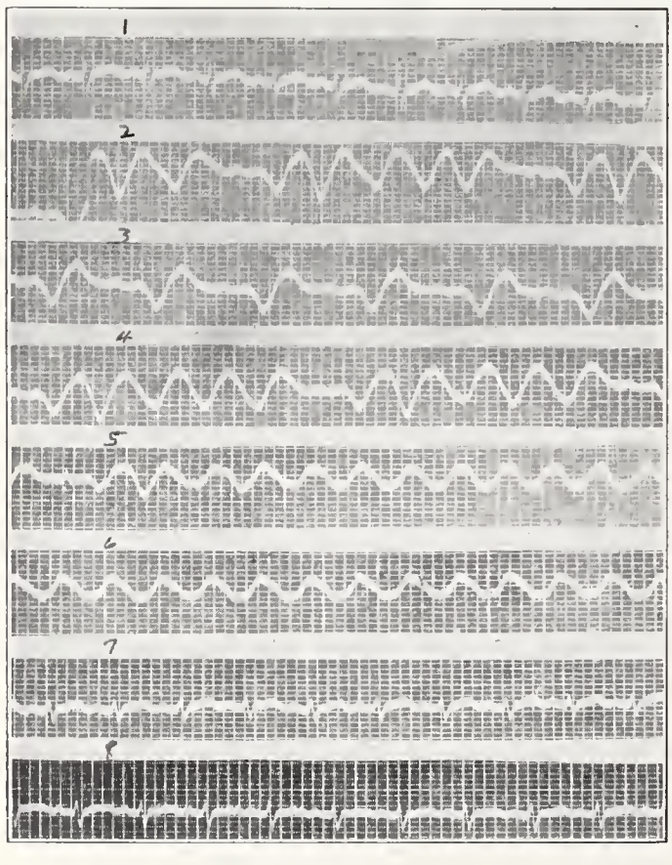

Fig. 4—Rabbit 7, D.

1. Lead II before injection.
2. Two—within a few seconds after injection.
3. Record No. 2—a few seconds later.
4. Record No. 2—one minute after injection.
5. Record No. 2—a few seconds later.
6. Record No. 2—a few seconds later.
7. Record No. 2—nine minutes after injection, practically normal.

Fifteen minutes later 1/48 gr. emetin hydrochlorid given intravenously. There was no immediate change.

8. Record No. 2—five minutes later. No apparent change.

Rabbit No. 8, A. Weight 7½ pounds.

In this experiment an attempt was made to determine the minimum dose of emetin producing distinct changes in the electrocardiogram.

1. Lead II before injection.

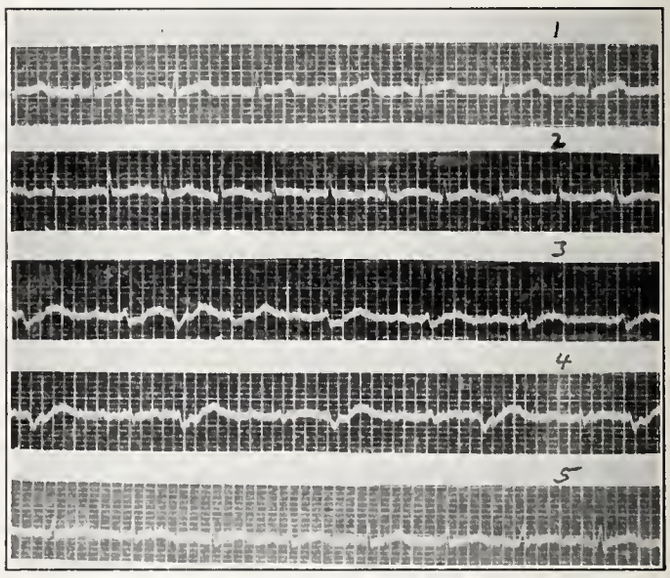

Fig. 5—Rabbit No. 8, A.

One-twelfth gr. emetin hydrochlorid was given intravenously. No definite change was noted.

2. Record No. 2—7, nine minutes after injection. No definite change. Twenty-three minutes after the first dose of 1/24 gr. emetin hydrochlorid was given intravenously. A distinct change was observed within a few seconds.
3. Record No. 3—about one minute after second injection.
4. Record No. 3—a few seconds later.
5. Record No. 3—ten minutes after second dose.

Rabbit No. 7, A. Weight 3¼ pounds.

At this point it was thought advisable to determine the effect, if any, of digitalis on the electrocardiogram of a rabbit.

1. Normal—Lead II before injection.

1 cc. digifolin was given intravenously. No immediate change was noted.

2. Record No. 3—no change noted. Twenty minutes later another ampoule of digifolin was given. No immediate effect.
3. Record No. 8—ten minutes after second ampoule.

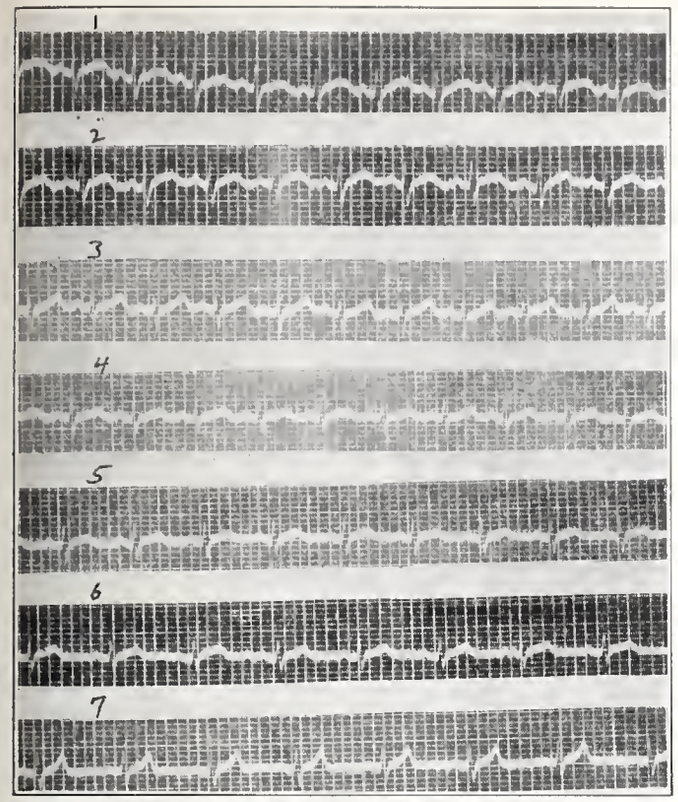

Fig. 6—Rabbits Nos. 7, A and 7, B.

Rabbit No. 7, B. Weight 3¼ pounds.

One week later the same rabbit was used.

4. Lead II—normal.

Six (6) cc. digifolin were injected slowly into a marginal vein of the ear. No immediate effect was observed.

5. Record No. 7—two minutes after injection.

6. Record No. 7—seventeen minutes after injection.

Except for ill-defined changes no definite effect upon the electrocardiogram was noted. After a profound sleep the rabbit appeared perfectly well.

7. Lead II sixty-three minutes after injection.

Rabbit No. 8, B. Weight 7½ pounds.

1. Lead II normal.

This rabbit received 1 cc. digifolin intravenously. No immediate change was noted. Four minutes later 1/24 gr. emetin hydrochlorid was given intravenously.

2. Record No. 1—nineteen minutes after first dose of emetin.

One-twelfth grain emetin hydrochlorid given nineteen minutes after first injection.

3. Record No. 1—one minute after second injection.

4. Record No. 2—six minutes after second injection.

5. Record No. 2—twelve minutes after second injection. Recovery.

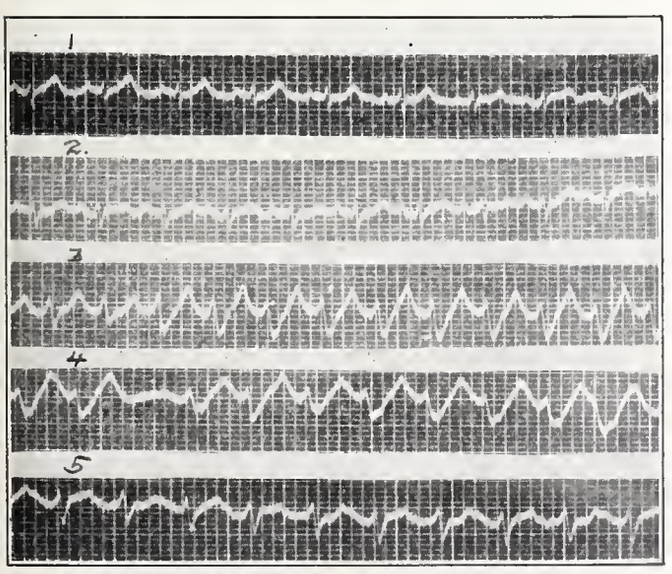

Fig. 7—Rabbit No. 8, B.

Rabbit No. 8, D. The same rabbit used in preceding experiment after a rest of twenty-one days.

1. Lead II before injection.

One-sixth gr. emetin hydrochlorid intravenously.

2. Record 0—immediately after injection.

3. Record 0—a few seconds later.

4. Record 0—a few seconds later.

5. Record 0—ventricular fibrillation.

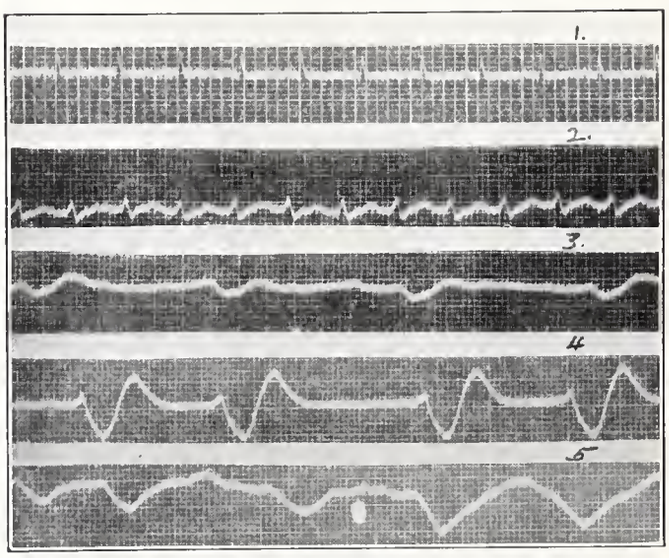

Fig. 8—Rabbit No. 8, D.

Rabbit No. 11. Weight 2½ pounds.

In this experiment the rabbit was given daily intravenous doses of 3 mg. emetin hydrochlorid (Sharp and Dohme) for six days. The dosage was approximately 1 mg. per pound body weight.

1. Record No. 1—normal.

2. Record No. 3—two minutes after initial dose.

3. Record No. 3—eight minutes after initial dose.

4. Record No. 4—six days later after receiving 18 mg. emetin hydrochlorid (Sharp and Dohme) divided into daily doses of 3 mg. each. Low voltage is the most striking feature of this record. This rabbit died two days later, immediately after receiving an intravenous injection of 3 mg. emetin hydrochlorid. Autopsy revealed nothing of significance.

Rabbit No. 10. Weight 3½ pounds.

This rabbit received daily intravenous injections of 4 mg. emetin hydrochlorid. The dosage

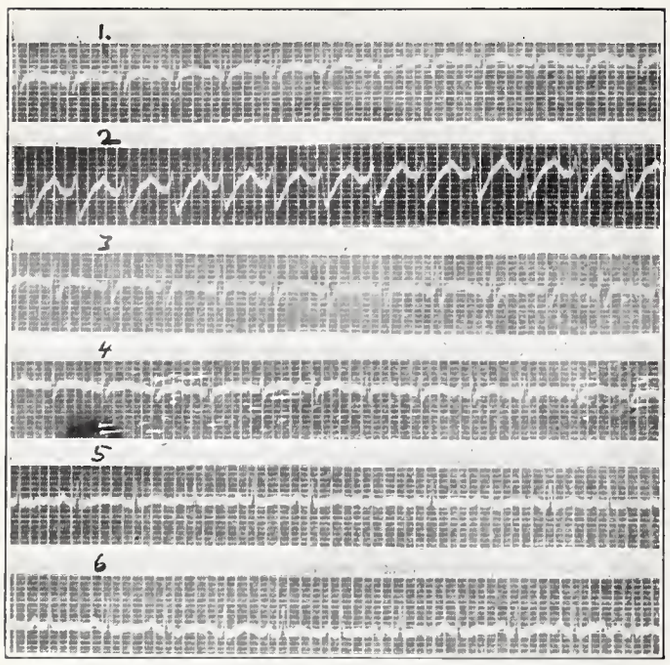

Fig. 9—Rabbits Nos. 11 and 10.

was approximately 1 mg. per pound body weight.

5. Normal record.

6. Record No. 1—immediately after seventh injection of emetin hydrochlorid. The animal received a total of 28 mg. emetin hydrochlorid.

This rabbit died twenty-four hours following the last injection. No autopsy was done, as the body was destroyed by one of the laboratory workers.

CONCLUSIONS

1. In rabbits, emetin hydrochlorid given intravenously in doses between one and two mg. per pound body weight will produce a distinct ventricular tachycardia which will revert to a normal rhythm in about ten minutes.

2. Digitalis in the form of digifolin will produce no definite change in the electrocardiogram of a rabbit even when administered intravenously in very large doses.

3. Emetin hydrochlorid given in conjunction with a relatively small amount of digitalis (digifolin 1 cc.) will not produce a definite change in the electrocardiogram unless the dose of emetin is between one and two mg. per pound body weight. In other words, digitalis will not lessen the dose of emetin required to produce definite changes in the electrocardiographic record.

4. The minimal intravenous lethal dose of emetin hydrochlorid for a rabbit is about 2 mg. per pound body weight.

5. The electrocardiogram of a rabbit receiving a lethal dose of emetin hydrochlorid shows a ventricular fibrillation from which, in our experiments, the animal does not recover.

6. Daily intravenous injections of emetin hydrochlorid approximately equivalent to 1 mg. per pound body weight, produce no marked permanent changes in the electrocardiogram of rabbits receiving a total amount of 18 mg. and 28 mg. respectively.

7. An electrocardiogram of a rabbit dying as a result of an injection of sodium cyanid is shown for comparison.

2308 Victoria Avenue.
1680 North Vine Street.

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AMERICAN HEART ASSOCIATION—ITS PLAN AND WORK*

By JAMES F. CHURCHILL, M. D.
San Diego

MEMBERS of the Medical Section and Guests: The increasing importance of heart disease as a cause of disability and death has in recent years become common knowledge to the general public as well as to the medical profession. The study of the bare mortality figures shows a steady increase in deaths ascribed to this cause, especially in the past fifteen years.

The realization of these facts led, first to the organization of the Society for the Prevention and Relief of Heart Disease and other similar organizations of more or less local activity. More recently these have been grouped into one body—The American Heart Association. It is proposed to make the work of this association as has been done in the Tuberculosis Association, national in scope, eventually interesting laymen as well as the medical profession. The first step in broadening the scope of the work of the association has been the formation of a Heart Committee in each state. The California committee has been organized within the past year, and it has seemed fitting to the state chairman (Dr. William J. Kerr) and to the committee to present this matter to the State Medical Society at this time. To this end, this session of the General Medicine Section is being devoted to a presentation of the work and aims of the American Heart Association and to a discussion of certain forms of heart disease. It is the desire of the committee to thus furnish you information as to its plans, to arouse your interest in the work and to enlist your aid. I shall attempt to outline to you the plans of the national association and of the state committee and to present some statistics on the heart disease problem.

In planning the organization of this association it has seemed best to the directors to cooperate with the National Tuberculosis Association to make use of the offices, nurses and clerical force of their organization, and to make each state committee the Heart Committee of the State Tuberculosis Association. I must admit that when this

* Chairman's address, General Medicine Section, Fifty-Seventh Annual Session.

plan was first brought to my notice it did not appeal to me as a good one, but on more mature consideration I feel there are many points in its favor. First, the Tuberculosis Association is a well-organized, experienced, going concern; it has the respect and confidence of the public generally; it has well-established clinics with trained social workers and nurses; it has been successful in its publicity work, and, lastly, by combining the offices and nursing force the overhead of the Heart Committee will be cut down very greatly. I cannot see that the Heart Committee will lose its identity or impair its usefulness by such a consolidation.

The details of the program for the state work have not been completed, but Doctor Kerr has arranged and published an outline which will serve as a basis for organization at this time. A large number of these pamphlets have already been distributed. Those of you who have not yet received a copy should ask for one at the heart exhibit.

The plan of the organization of the Heart Association is very simple. The directors of the American Heart Association have general supervision of the work throughout the United States, directing publicity, collecting statistics, and publishing the *American Heart Journal*. They appoint the state chairmen. The state chairman appoints the State Heart Committee, selecting one or more members from each county society. The local member of the committee, in turn, nominates the county committee of which he acts as chairman. It is planned to appoint on the county committees those physicians who are more interested in heart work—internists, pediatricians, school physicians, health officers, etc. Later, lay members will be added to the state and county committees.

One of the first things to be undertaken will be a publicity campaign; and for the present this will be confined to the medical profession. It is felt that the physicians of the state must first be thoroughly familiar with the plans of the association, and with the pathogenesis, classification and diagnosis of heart disease before any attempt is made to interest and arouse the public. There is a peculiar psychology about "heart disease." The very words themselves bring fear to the minds of the laity, and the association feels that to arouse the general public to a sense of the alarming increase in morbidity and mortality from heart disease before the profession is ready to handle the situation would be to defeat at the outset the aim of its work. It is not the desire of the association to instill into the minds of the people the fear of heart disease, making semi-invalids of many apprehensive persons, but to inform the public gradually as to the causes of heart disease (and thus aid in its prevention) and as to the care and protection of those unfortunate individuals who do have it. The publicity campaign among the physicians of the state will be carried on by means of county medical meetings devoted to the subject (Doctor Kerr has already addressed a number of such meetings), by distribution from time to time of literature to the state membership, and by exhibits such as you see here at this meeting. One of the first steps the committee is taking is to familiarize you with the standard classification of heart disease as adopted by the American Heart Association. Until all physicians use the same classification, giving the etiological, structural and functional diagnosis in each case, little or nothing can be done in the way of statistical study of our situation.

The committee plans to publish in California and Western Medicine special articles dealing with the etiological factors of heart disease, particularly rheumatism, syphilis, and the acute infectious diseases. Through the local committees surveys will be made of the incidence of heart disease in children, both of school and preschool age, and the incidence of rheumatic fever, the acute infections and syphilis, attempting to make a comparative study. These surveys will be made through school physicians and by the collection of data from hospitals, clinics, children's homes, and the reports of physicians from their personal practice.

There is a growing realization of the importance of heart disease as an economic problem, and special attention should be given to the study of hospitalization, convalescent care and rehabilitation of heart patients. The citizens of California and the physicians of California should be particularly interested in the prevention and care of heart disease, for as I will show in the tables,

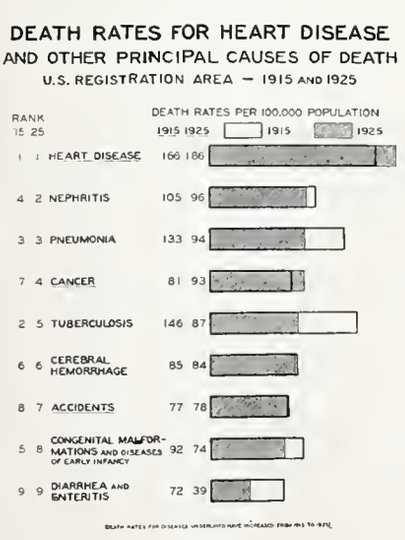
DEATH RATES FOR HEART DISEASE
AND OTHER PRINCIPAL CAUSES OF DEATH
U.S. REGISTRATION AREA — 1915 AND 1925
RANK
15 25
DEATH RATES PER 100,000 POPULATION
1915 1925
1915
1925
1 1 HEART DISEASE 166 186
4 2 NEPHRITIS 105 96
3 3 PNEUMONIA 133 94
7 4 CANCER 81 93
2 5 TUBERCULOSIS 146 87
6 6 CEREBRAL HEMORRHAGE 85 84
8 7 ACCIDENTS 77 78
5 8 CONGENITAL MALFORMATIONS AND DISEASES OF EARLY INFANCY 92 74
9 9 DIARRHEA AND ENTERITIS 72 39

Chart 1.

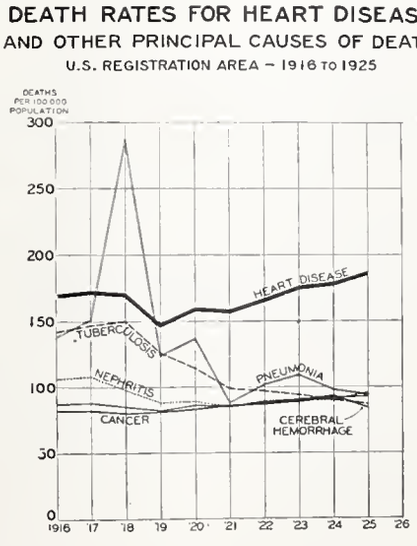

Chart 2.

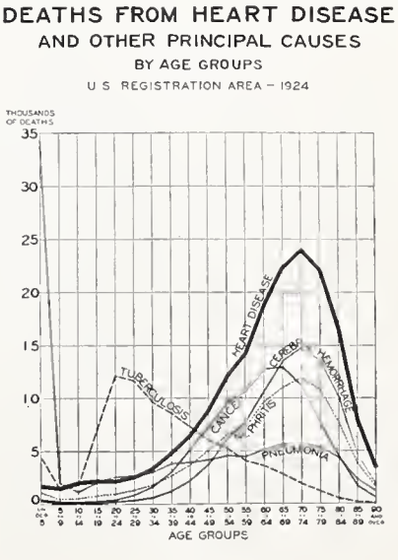

Chart 3.

DEATHS FROM HEART DISEASE COMPARED WITH DEATHS FROM ALL CAUSES BY AGE GROUPS
United States Registration Area, 1924

Age-Groups	Heart Disease	All Causes	Per cent of total
All ages	176,671	1,373,990	15.6
Under 5	1,543	220,122	7.8
5 - 9	1,614	22,887	8.2
10 - 14	1,973	17,834	11.1
15 - 19	2,184	29,049	7.8
20 - 24	2,179	38,918	9.7
25 - 29	2,550	39,216	6.9
30 - 34	3,306	40,854	9.1
35 - 39	4,854	47,880	10.1
40 - 44	9,461	51,380	12.6
45 - 49	8,609	67,351	16.4
50 - 54	11,948	67,273	17.8
55 - 59	14,167	70,788	20.0
60 - 64	18,894	84,974	22.0
65 - 69	22,279	93,031	23.9
70 - 74	23,851	93,954	25.5
75 - 79	22,148	83,830	26.4
80 - 84	14,539	65,913	25.9
85 - 89	8,082	33,087	24.4
90 and over	3,357	16,617	20.4
Unknown	180	1,545	11.7

Table 4.

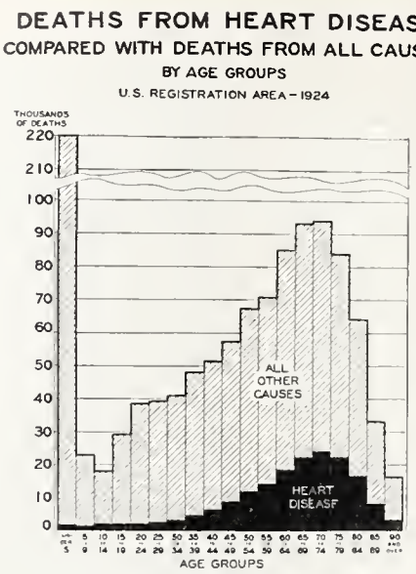

Chart 5.

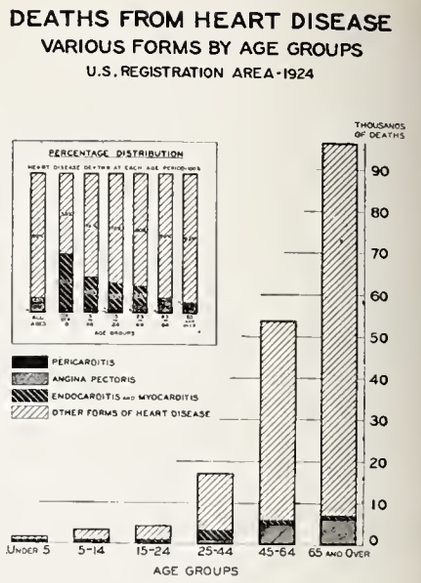

Chart 6.

California is fifth among the states in the percentage death rate from heart disease.

The following charts and tables will, I think, serve better than any other method to impress upon you the growing importance of heart disease in this country. These tables are taken from a recent publication of the American Heart Association, "Heart Disease Mortality Studies," compiled for the United States Registration Area by Miss Jessamine Whitney.

Chart 1 shows the relationship between the leading causes of death and the changes which have occurred in that relationship in the years 1915 and 1925. As you see, heart disease led each time. Tuberculosis dropped from second to fifth place. The change in nephritis is more apparent than real, due to the change in classification of nephritis as a cause of death.

Chart 2 is a graph showing death rates for the six principal causes of death for the decade, 1916-1925. All have tended downward except heart disease and carcinoma. The 1918 peak for pneumonia was due to the influenza epidemic. The 1919 dip for heart disease was undoubtedly due to the fact that so many heart patients had died the preceding year of influenza.

Chart 3 shows the distribution of deaths by age groups (five-year periods). As would be expected, the peak for heart disease occurs at the 70 to 74 year period, with the cerebral hemorrhage and nephritis peaks at the same point. Pneumonia has a double curve, under 5 years and again at about 70. Tuberculosis coming at 20 to 24 years stands out notably from the others.

Table 4 shows the relationship of the mortality from heart disease to the mortality from all causes in each five-year age period. Heart disease causes 15 per cent of all deaths each year. The most important figure in this chart is the percentage for the period 10 to 14 years. You will note that this is given as 11.1 per cent, which is very high for a period in which the general mortality is low, and emphasizes better than anything else the rôle played by the infectious diseases of childhood in the production of heart disease.

Chart 5 shows graphically the figures of the preceding table.

Chart 6 shows the deaths from various forms of heart disease by age groups. This chart was chosen to show the necessity for a more exact and uniform classification of heart disease. Under the present system the census bureau recognizes only endocarditis and myocarditis, pericarditis, angina pectoris and "other forms of heart disease." You will see that "other forms" make up 89 per cent of the total. If a standard classification were used we would be able to separate the 89 per cent into the proper divisions, and thus gain some idea of the relative frequency of the various forms of cardiac affections for different ages.

Table 7 is probably the most significant one of this series. It shows the changes in heart disease death rates by age groups for the years 1914 and 1924. Note that the total deaths show an increase of 12 per cent, while the groups up to 15 years show a remarkable decrease. This must be due to better care of infants and of children of the grade schools, and represents the result of control of infectious diseases and of health inspections in the schools. Apparently young people take fewer precautions as to their health when

REDUCTION IN HEART DISEASE DEATH RATES
BY AGE GROUPS
United States Registration Area, 1914 and 1924

Age-Groups	Rate per 100,000 population		Per cent change
	1914	1924	
All ages	159.3	178.4	+12.0
Under 5	20.8	16.6	-24.0
5 - 9	20.0	13.6	-32.0
10 - 14	25.0	20.5	-18.0
15 - 19	24.6	26.7	+ 8.6
20 - 24	26.0	26.6	+ 2.3
25 - 44	62.8	67.1	- 9.1
45 - 64	304.1	312.3	+ 2.7
65 and over	1640.2	1941.3	+18.4

Table 7.

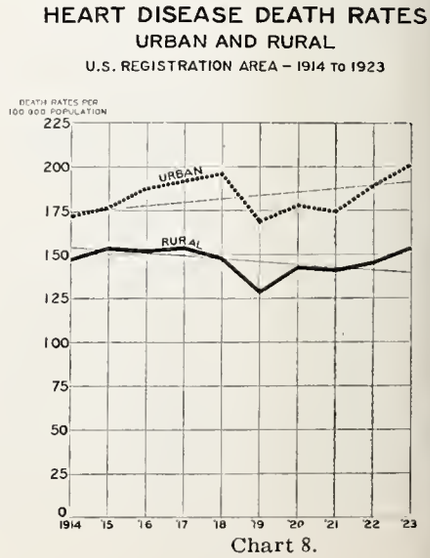

Chart 8.

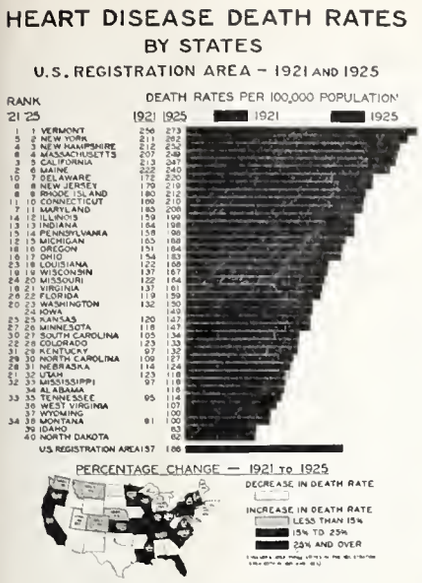
HEART DISEASE DEATH RATES
BY STATES
U.S. REGISTRATION AREA – 1921 AND 1925
RANK
21 25
DEATH RATES PER 100,000 POPULATION
1921 1925
1921
1925
1 1 VERMONT 256 273
2 2 NEW YORK 211 262
3 4 NEW HAMPSHIRE 216 256
4 6 MASSACHUSETTS 207 249
5 3 CALIFORNIA 213 247
6 5 MAINE 227 240
7 10 DELAWARE 172 220
8 8 NEW JERSEY 179 219
9 9 RHODE ISLAND 180 212
10 11 CONNECTICUT 166 210
11 7 MARYLAND 185 208
12 12 ILLINOIS 159 199
13 13 INDIANA 154 198
14 15 PENNSYLVANIA 158 196
15 14 MICHIGAN 165 188
16 16 OREGON 151 184
17 17 OHIO 154 183
18 23 LOUISIANA 122 168
19 19 WISCONSIN 137 167
20 24 MISSOURI 122 164
21 21 VIRGINIA 137 161
22 22 FLORIDA 119 159
23 20 WASHINGTON 132 150
24 IOWA 143
25 25 KANSAS 120 147
26 26 MINNESOTA 118 147
27 27 SOUTH CAROLINA 105 134
28 28 COLORADO 123 133
29 29 KENTUCKY 97 132
30 30 NORTH CAROLINA 109 127
31 31 NEBRASKA 114 124
32 32 UTAH 123 118
33 33 MISSISSIPPI 97 118
34 ALABAMA 116
35 35 TENNESSEE 95 114
36 WEST VIRGINIA 107
37 WYOMING 100
38 38 MONTANA 91 100
39 IDAHO 83
40 NORTH DAKOTA 62
U.S. REGISTRATION AREA 137 166
PERCENTAGE CHANGE — 1921 TO 1925
DECREASE IN DEATH RATE
INCREASE IN DEATH RATE
LESS THAN 15%
15% TO 25%
25% AND OVER

Chart 9.

INCREASE IN HEART DISEASE DEATH RATE
DURING THE LAST QUARTER OF A CENTURY
UNITED STATES REGISTRATION AREA
DEATH RATES PER 100,000 POPULATION
1900 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25
DATA FROM UNITED STATES CENSUS BUREAU

Chart 10.

they reach the age of personal independence, as shown by the increase from 15 to 24 years.

Chart 8 shows heart mortality rates for the urban and rural (under ten thousand) population over the decade, 1914-23. The urban rate is higher throughout, but the curves are fairly parallel.

Chart 9 shows the heart death rate by states in 1921 and again in 1925. There has been some increase in the rate in nearly every state. With the exception of California, the higher percentages are all found in the New England states which have a larger proportion of elderly people than the western and midwestern states. California has come from third down to fifth place. Of course our very high percentage is due to the large numbers of health seekers and aged persons who come to us each year. In other words, the percentage figures hardly represent the true state of affairs for California. At that, our heart death rate is much too high.

Chart 10 shows the increase in the heart death rate in the first quarter of the present century. The trend has been rather steadily upward, the only break being in the three or four years following the influenza epidemic, the explanation of which has already been given.

The Heart Committee through your section officers hopes to present each year to this section some phase of heart disease. This year the papers will deal largely with the rheumatic heart; next year we hope to take up the consideration of syphilis in its relation to heart disease. Reports on research, bearing on the etiology and prevention of heart affections, will be made as the work appears.

It would not seem too much to hope that in the next ten or twenty years a change as great may be brought about in the heart disease death rate as has been done in the past twenty years in the death rate for tuberculosis.

To bring this about, the medical profession and health organizations should concentrate their efforts on preventable heart disease, particularly on the prevention and treatment of rheumatic fever and syphilis. The public must be taught that rheumatic fever is a communicable disease and should be isolated as such. Recent work serves to renew the hope that a specific antitoxin for rheumatic fever will be available in the near future.

Less brilliant results are to be expected from study and treatment of the degenerative lesions. Progress with this group can only come slowly through education of the public as to the effects of work and worry, bad habits, obesity, foci of infection, et cetera.

The committee is asking the interest and coöperation of every physician in the state in this fight. The problem is a more serious one for us at this time than is tuberculosis. It should be our task to reduce the number of cases of heart disease occurring in California, and to learn better how to care for those which do occur and those which come to us from other sections. The only way we can do this is by an organized, sustained movement in which we all take part.

1310 Medico-Dental Building.

AURICULAR FIBRILLATION—A REVIEW OF A SERIES OF CASES*

By Donald J. Frick, M. D.
and
Robert H. Kennicott, M. D.
Los Angeles

Discussion *by James E. Churchill, M.D., San Diego; William J. Kerr, M.D., San Francisco.*

THIS paper presents a review of fifty-one cases of chronic auricular fibrillation. These cases were selected from seventy which have been seen in private practice. Nineteen of the original cases have been dropped from this investigation because of inability to follow them to their termination, or to date. We realize that a series of fifty-one cases is not large, but, having noted the paucity of statistics on this subject, we submit the findings derived from a study of this group.

SUMMARY OF CASE REPORTS

The patients are divided below into groups depending on their age. These groups each comprise a span of ten years. There are no patients in this series under twenty years of age.

The Third Decade—Among the eight patients in the third decade, who have fibrillated for periods ranging from eight months to twelve years, there have been two deaths, both from embolism. Seventy-five per cent of these patients are living. One has regained normal rhythm after quinidin, and is living an active life, as a clerk in the Navy.

The Fourth Decade—In the fourth decade there are nine patients who have fibrillated over

* Read before the General Medicine Section, California Medical Association, at the Fifty-Sixth Annual Session, April 25-28, 1927.

periods from two to twenty years. There have been three deaths; two from embolism (one following an unsuccessful attempt to correct fibrillation with quinidin) and one from decompensation. Of these patients 66.6 per cent are living.

The Fifth Decade—Of the fourteen patients in the fifth decade who have fibrillated over periods from twenty-nine days to fifteen years, six are dead, three from embolism, two from decompensation, and one from pneumonia. Two were treated successfully with quinidin, one maintaining normal rhythm for one and one-half years (to date). The second patient maintained normal rhythm for twenty-two days. After a second course of quinidin she had normal rhythm for two months, after which she has fibrillated for one and one-half years, having failed to respond again to quinidin. Controlled by digitalis she is comfortable and able to make her living as a stenographer.

The Sixth Decade—In the sixth decade there are twelve patients, of whom eight have died, five from decompensation, one from embolism, one from unknown cause, and one from carcinoma. In this decade 33.4 per cent of the patients are living, one having responded to quinidin by a return to regular rhythm. The duration of fibrillation in these cases varied from twenty days to sixteen years.

The Seventh Decade—In the seventh decade there are seven patients who have fibrillated from one year and four months to thirteen years. Here there were three deaths: one from decompensation and two from embolism. Of this group, 56 per cent are living. Of these patients living, one is as active as is the average woman of seventy-five. Another of the same age who has had fibrillation for thirteen years leads a quiet life but walks about the house and motors daily, and is perfectly comfortable and free from symptoms referable to the heart. A third limps somewhat, following a left hemiplegia, and suffers from bilateral cataracts, but drives out to theaters and teas and enjoys life very thoroughly. The fourth, a man who sustained prostatectomy one and one-half years ago, has fibrillated for more than three years and has passed through one period of marked decompensation. He writes that he has been working part time as a carpenter for the past year, and is able, in a modest fashion, to support his wife and himself.

ETIOLOGIC FACTORS

Sex—The occurrence of fibrillation in this series was distributed most largely among women (66 per cent) while only 34 per cent were in men. These patients appeared in a private practice where the yearly percentage averages four men to six women. The fifty-one patients reported here show a preponderance of women (66 per cent) corresponding roughly with the per cent of women reporting yearly for study. The preponderance of woman in this group is, therefore, more apparent than real. If we compare our figures we find little difference in the occurrence of fibrillation in the two sexes.

Age—When these patients are divided as to age decades there is a steady increase in incidence to the fifth, after which there is a slight decline. In the second decade there were but two; in the third, eight; in the fourth, nine; in the fifth, fourteen; in the sixth, twelve; and in the seventh, seven. There were no patients in this series over seventy-five years of age, or under twenty years. Two of the patients in the seventh decade are seventy-five years of age. The average age of these patients is fifty-three years.

Mitral and Aortic Valve Lesions—Disease of the mitral valve, insufficiency or stenosis, or both, occurred in twenty-five of the total fifty-one cases. Aortic insufficiency was seen in three. Reviewing a series of 135 cases of disease of the mitral valve in our office, we found auricular fibrillation in twenty-eight (20.7 per cent).

Previous Infections—Upon reviewing the histories of these patients, we find a report of rheumatism in seventeen instances, tonsillitis in eighteen, influenza in eleven, typhoid in seven, hyperthyroidism in four, nephritis in four, and scarlet fever in three. There were no luetics in the entire group. Six of the fifty-one patients gave a history of long years of paroxysmal attacks preceding the onset of persistent fibrillation. (Recent reports showing gratifying results with the use of quinidin in paroxysmal auricular fibrillation give one hope that such histories will be less frequent in the future.)

LABORATORY METHODS OF INVESTIGATION

Electrocardiogram—The importance of electrocardiographic study of these patients lies primarily in establishing the diagnosis of auricular fibrillation. By this means, however, other abnormalities may be discovered, such as ventricular extrasystoles. The detection of extrasystoles is important as evidence of cardiac damage and as an early sign of digitalis overdosage. They are difficult or impossible to determine in the fibrillating heart without this means. Relative preponderance of the right or left side of the heart, bundle branch block and signs of myocardial degeneration, such as notching of the Q R S waves and inversion of the T wave, are only shown in the electrocardiograms. In a large proportion of the patients studied, we distinguish our earliest signs of digitalis action in the inversion of the normally upright T wave or a change to the upright if this wave has been previously inverted. Canby Robinson states that "therapeutic results occur in man after 30 to 40 per cent of the lethal dose of digitalis has been administered, which is not much more than the amount required to cause inversion of the T wave." T-wave inversion "appears in thirty out of thirty-seven patients and is seen before changes in rate or toxic signs are noted." It is by means of the electrocardiogram that the first toxic signs of digitalis administration are detected. Wilson and Levine have shown that ventricular extrasystoles antedate other signs of overdosage. It is important to have tracings before and during digitalis medication if the full significance of these changes is to be determined.

Orthodiagram—The orthodiagram is indispensable in our work, giving as it does valuable information concerning heart size and so-called heart-

muscle tone. It also demonstrates progress in these cases, showing marked reduction in size and improvement in "tone" as the patient's condition improves. Serial orthodiagrams made in thirteen of fifty-one cases demonstrated enlargement of the heart during decompensation, while subsequent tracings showed decreased heart area as the patient's condition improved and later enlargement as failure supervened.

TREATMENT

Medication—We have two drugs in our armamentarium of special merit in the treatment of auricular fibrillation. These are digitalis and quinidin.

Quinidin—In this series we have given ten courses of quinidin to eight different patients. We feel that the number of cases suitable for quinidin treatment is very sharply limited. We have, therefore, accepted a rather arbitrary and definitely limited set of standards to apply to the selection of patients who are to receive treatment. We have avoided the use of the drug in the following persons: those with a history of previous embolism, those who have signs of cardiac decompensation, those who have very large hearts, those over sixty-five years of age, and those with badly damaged kidneys. These restrictions require explanation in several respects. If we take, for example, a person who has suffered from cardiac decompensation and has later been restored to good compensation through the proper use of rest and digitalis, this patient should then be transferred from the rank of a poor risk to that of a good subject for quinidin treatment. We must occasionally disregard our rule denying quinidin treatment to patients over sixty-five years of age, for if his fibrillation is of recent origin, his heart well compensated, and his kidney function good, he must be considered a good risk for quinidin. In the ten attempts at quinidin control we have secured normal rhythm on six occasions in four patients. This corresponds with the average statistics, although some investigators have secured satisfactory results in as high as 80 per cent of their cases. Of these four patients, two have been followed to date. Their hearts have remained regular. One of these, who had auricular fibrillation for four years, has now enjoyed a regular heart action for more than two years. The third had regular rhythm for a period of one year and has not been heard from since. The fourth was given courses of quinidin on three occasions. Normal rhythm followed the first course for a period of twenty-two days, after which fibrillation recurred. The heart was later controlled by quinidin for a period of two months. After this fibrillation was resumed. A third attempt to restore normal rhythm failed.

Dosage—The average total dose of quinidin was 4.7 grams, administered over an average time of five days. The maximum dosage was 9.2 grams, given in nine days. The minimum was 1.2 grams in three days. In the latter case cessation of fibrillation was secured. In the former the heart continued to fibrillate and the patient died of pulmonary infarcts, the first of which occurred eight days after the drug was withdrawn. The only toxic symptoms noted in the administration of quinidin were, nausea, vomiting and ringing in the ears. In none of the cases was there any reaction to the two customary test doses of .2 of a gram.

Procedure—We have adopted the following outline in the dosage of quinidin. Two test doses of .2 of a gram are given at six-hour intervals. If these are not followed by toxic symptoms, four-tenths of a gram is given three times a day. In suitable cases carefully watched, doses may be increased to one gram, given three times a day. The patient should be kept at rest. Quinidin should be discontinued, if the ventricular rate exceeds 130, or if toxic symptoms appear. It has been our custom, after the restoration of normal rhythm, to ration the patients on quinidin in small dosage, giving the drug in two-tenths of a gram doses, two or three times a day. We have found no evidence in the literature, nor has our experience led us to believe that this continued medication has any deleterious effect upon the patient. Case reports indicate that remission is less likely in those cases where such rationing is resorted to.

Complications—Objection has been made to quinidin because of the untoward results following its use. These accidents may be divided into two classes, mild toxic signs (such as are seen in quinin medication) and severe reactions (embolism, respiratory failure, ventricular fibrillation, and heart block). The first of the more serious results, namely embolism, cannot be accepted as a contraindication for the use of the drug. There have been extensive reports on the occurrence of embolism in auricular fibrillation, both with and without quinidin. The most comprehensive of these comes from the Massachusetts General Hospital, where it was determined that embolism occurred in 4½ per cent of the cases treated with quinidin, and in 8 per cent of the cases treated with digitalis alone. In our brief series we had only one patient in whom embolism occurred following quinidin. In this patient the complication occurred eight days after the cessation of medication. In the same series there were twelve reports of embolism in patients treated with digitalis. In view of such facts we do not feel that we are increasing a patient's hazard by administering quinidin. In the other complications, namely the toxic ones, we are dealing with a quite different problem. The possibility of respiratory failure or heart block, or ventricular fibrillation, should cause us to pause. These are dangers that the patient is not normally subjected to, but which are introduced with the administration of this drug. These complications are, however, exceedingly rare. In determining whether quinidin should be given or withheld in a particular case, one should weigh these remote possibilities against the possible benefit to the patient.

Digitalis—Digitalis still remains our mainstay in the treatment of auricular fibrillation. We feel that the form in which digitalis is administered is relatively unimportant, so long as an active

product is exhibited in sufficient dosage to produce therapeutic effects. We have avoided massive dosage and rapid digitalization and prefer to administer the drug in moderate-sized doses every three to four hours, until the desired result is produced. We prefer, as a rule, a good tincture. In administering tincture of digitalis from a dropper, it must be remembered that thirty-five to forty drops are required to make fifteen minims or one cubic centimeter. When the heart has been slowed to the desired point the dose of digitalis is reduced and the patient is kept on a dosage that will control the heart at the desired rate. As a rule this can be nicely adjusted with a little experimentation. Usually the ventricular rate should be reduced to seventy or eighty beats per minute. Conclusions of prognostic value can be drawn from the heart's response to digitalis.

Continued Treatment—It is our practice to keep the patient on a maintenance dose of digitalis without "rest" periods. Occasionally a particular patient will have periods of decreased elimination of the drug and will show mild toxic symptoms. The well-educated patient will have learned to detect the earliest appearance of nausea or change in vision and will report for instruction or reduce his dose of digitalis temporarily. Many of the patients reported here have been maintained on almost constant dosage for years, giving no other evidence of digitalis action than well-controlled auricular fibrillation and diphasic T waves in the electrocardiogram.

Complications—Irritability of the stomach is frequent in cardiac decompensation. When it occurs early it cannot be considered as a result of digitalis therapy. Eggleston has shown, after a painstaking study of eleven cases of auricular fibrillation, that nausea from digitalis occurs from five to ten days after beginning administration, and after an average total dosage of 3.08 grams. He has demonstrated that both vomiting and the purgative action of digitalis are due to central stimulation. Vomiting and nausea seldom occur following digitalis administration until a sufficient quantity has been absorbed to produce its characteristic effects on the heart. We are confronted with an unfortunate situation in the treatment of auricular fibrillation, since any treatment that improves the heart action adds to the danger of embolism. It matters not whether the improved heart action is the result of more efficient beats of a heart slowed by digitalization, or a heart restored to normal rhythm through the use of quinidin. One cannot feel that these patients should be denied the beneficent effects of treatment merely because there is a danger of embolism following in the train of restored compensation.

PROGNOSIS

Causes of Death—In this series of patients we find twenty-one deaths (41.1 per cent). Sudden death or evidence of cerebral or pulmonary embolism has occurred in thirteen of the fifty-one patients (25.5 per cent). These figures compare with those of Duroziez, who reports embolism in one-quarter of a series of forty-three patients. Sudden death occurred in nine of our patients (43 per cent of the total). Four have survived their embolisms. Ten deaths were due to cardiac decompensation (48 per cent), one to carcinoma, and one to pneumonia (9 per cent). Clinical evidence of pulmonary embolism was found in two patients (resulting in death in one and recovery in the other). In the remaining eleven patients the emboli lodged in the brain (eight of these patients died, three recovered). With the exception of one these patients were all receiving digitalis. This is the patient who has previously been referred to as one who was on no medication at the time, but had received quinidin eight days previously. In only one of the thirteen patients was there cessation of fibrillation preceding embolism. The hemiplegia and aphasia resulting from cerebral embolism may in a certain number of patients improve, due to the breaking up of the clot, the particles of which are carried into smaller or less important vessels. Frequently the symptoms following a small cerebral embolus are so mild as to attract very little attention, a slight aphasia lasting a few hours, or a fleeting paralysis of a leg or arm. Following these there may be no residual symptoms.

Fibrillation With and Without Mitral Disease—Twenty-five of the total number of patients had mitral disease as well as auricular fibrillation. Fifty per cent of these are dead. The maximum and minimum period of fibrillation of this group was fifteen years and one year and nine months respectively, with an average duration of five years and eight months. The remaining 50 per cent are alive. The survivors have been fibrillating over a period of from three months to twenty years, with an average of six years and four months. Twenty-six of the total group had auricular fibrillation uncomplicated by mitral disease. Forty-four per cent of these patients are dead. They had fibrillated over a period of one month to ten years, the average duration being two years and eight months. Fifty-six per cent of the patients with "uncomplicated" fibrillation are alive. The average period of fibrillation of this group is five years and five months. From this short series the outlook for the individual with fibrillation and without mitral disease would appear only slightly more favorable than for the patient having both. Viewed from the angle of mitral disease, reports from the Mayo Clinic indicate a marked tendency toward the shortening of life expectancy for persons in whom auricular fibrillation has complicated valvular heart disease. Wiggers states that auricular fibrillation "superimposed on valvular lesions or myocardial weakness is unfavorable, although even such individuals have been known to lead useful and energetic lives for ten or fifteen years."

Length of Life—In reviewing these reports one is impressed by the fact that these people may live for years in comfort and carry on useful work

while fibrillating. The longest record of fibrillation in these fifty-one patients is twenty years, the shortest twenty days. The average duration is five years. It is necessary that the activity of these patients be restricted. They should be forced to live at a slower pace than other persons of their age. However, in the majority of cases, when properly controlled and carefully educated, they may be useful and productive. Among the patients in the sixties is included a busy financier, who carried on a large and active business, spending full hours in his office for more than seven years. This activity was stopped only by the unfortunate development of carcinoma, which eventually caused his death. It is remarkable that among the elderly patients (seventy and above) the restrictions put upon them, when the heart is controlled and compensating, are scarcely more than their years would warrant. They are, of course, seldom persons in active employment, but many of the women assist somewhat in their household duties, enjoy social functions, driving, and activities of the home as would other women of their years.

The mortality rate was very high in the sixth decade, with cardiac decompensation as a cause in a surprisingly large proportion of the patients. It points out the necessity of an initial period of prolonged rest and careful education, with gradual resumption of a restricted life at a lower activity level than the patient had formerly known. With such care and training the outlook for reasonable longevity is really not dark. Unfortunately patients at this time of life have reached their maximum activity and business achievement and are difficult to control, not taking kindly to any restriction of their work or social life.

CONCLUSION

We feel optimistic about the future, for with early recognition of cases of paroxysmal fibrillation and prompt recourse to quinidin, we may hope for a reduction in the frequency of permanent fibrillation. Early cases of chronic fibrillation respond most readily and permanently to quinidin therapy. Through the use of the electrocardiogram and methods for accurate study of the heart size and tone, rest, drug therapy, and exercise may be carried forward with greater hopes of satisfactory results. Proper education of the patient also promises better results. The patient so trained that he has a good understanding of the problem he has to confront can adjust himself to his limited activities and become a useful citizen in place of subsiding into a state of invalidism.

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DISCUSSION

James F. Churchill, M. D. (1310 Medico-Dental Building, San Diego)—Auricular fibrillation is an occurrence of such frequency and seriousness in cardiac patients that a report of an intensive study of a group of such cases is of great value. Through a comparison of many such reports embracing a very large number of cases the management of fibrillation will become more standardized and, what is more important, we may better learn to anticipate and prevent its occurrence.

One of the most interesting discussions in the heart literature of recent years is that concerning the use of quinidin in attempting to restore normal rhythm. Rarely do men of equal experience take such absolutely opposed views on a subject. They vary from the seemingly overenthusiastic through the conservative course outlined in this paper to opposition to the use of quinidin in any case of chronic fibrillation. The supporters of the latter view urge that, entirely aside from the dangers attending the use of quinidin, the restoration of normal rhythm immediately places the previously fibrillating heart out of digitalis control and, therefore, the patient will be more harmed than benefited by what at first sight would seem a very desirable change. My own observations and experience, however, lead me to support the views of the authors, especially in younger mitral patients who have well compensated hearts.

In the treatment of decompensated fibrillation I prefer to order digitalis in large doses at longer intervals, it being my practice to order each dose separately until the rate has been reduced to the desired point. After that a standing order is left for a smaller control dose. I believe massive dosage produces quicker and surer results than does the slower method used by the authors, and I can see no objections to it.

William J. Kerr, M. D. (University of California Hospital, San Francisco)—A report such as the authors have presented on a group of patients with auricular fibrillation is of great importance in view of the fact that the patients have been carefully studied and have been followed over a long period of time. Private practice offers an opportunity to carry on studies such as this which tend to modify the prevailing opinion in the textbooks on cardiovascular disease. We see the patients who may go for many years with this disturbance in rhythm, without much discomfort who are able to carry on a more or less regular life. One must be impressed by the relatively small number of instances where mitral disease was described by the authors. It has been my experience that such a disturbance in rhythm makes it very difficult at times to decide whether or not mitral disease is present. If I am unable to assure myself of the presence of mitral disease, I have usually made a more determined effort to discover the presence of adenomata in the thyroid or other thyroid disturbance. In a few instances patients with mitral stenosis, with or without other valvular damage, will show some enlargement of the thyroid gland accompanied many times with exophthalmos. I believe this to be a secondary disturbance of the thyroid gland, probably through the effects on the sympathetic nervous system. As such patients improve, the eye signs tend to clear up. This finding in a patient with mitral disease and auricular fibrillation makes the differential diagnosis at times very difficult.

There is one point which the authors have stressed which I believe to be of tremendous importance. They report a great number of instances where death occurred from embolism. Those who have urged great caution in the use of quinidin in an attempt to correct the irregularity have lost sight of the fact that we always observed a high percentage of embolic phenomena in the group with mitral disease long before quinidin was ever used. While I have hesitated a little to use quinidin in cases where definite embolism had occurred, I do not believe that the danger from this cause is very great.

I agree with the authors that digitalis is the drug par excellence in the treatment of well-established auricular fibrillation with decompensated hearts, particularly if the electrocardiogram shows a fairly quiet string between ventricular complexes. In those cases where the fibrillary waves are numerous and belong to the flutter-fibrillation group, quinidin should be given a trial, especially if there is no evidence of

marked myocardial damage. It has been our practice to control chronic passive congestion first by the use of digitalis and other appropriate measures. When this stage has arrived we give quinidin in about the same manner as that described by the authors. We have at times given much larger doses, and in one case had to give a total of 18 grams over a period of about five days to restore the normal rhythm. There is altogether too much hesitation on the part of many practitioners to use such a valuable drug as quinidin has proven to be. Just as with any other potent drug, we must appreciate the indications for its use and then must give the drug until we have secured the desired effect or until toxic symptoms require the withdrawal of it. We should remember that quinidin is fairly rapidly eliminated and the dose must be fairly well spaced during the twenty-four hours, giving three or four doses a day. When the rhythm has been restored it is usually necessary to keep up small doses of the drug over a considerable period of time. After a period of weeks, or months, the dosage can be reduced keeping up the frequency, however, and later perhaps entirely abandoned. We have treated some patients who have suffered from paroxysmal attacks of auricular fibrillation over a period of four or five years with perfect satisfaction as long as the drug was continued. In most cases where mitral disease is present the progressive nature of the process on the mitral valve eventually brings about a state where quinidin has little or no value and then we can give digitalis. I do not agree with the point made by some writers to the effect that the patient is out of digitalis control with the normal rhythm. We usually find that if the quinidin is withdrawn, the irregularity returns. There are a few cases, however, where the heart rate is rapid and the function is impaired when the rhythm has been restored. In such instances the restoration of normal rhythm becomes an unhappy event. I do not know how we can anticipate this condition. In some instances a nodal tachycardia and even ventricular tachycardia or ventricular fibrillation may result. There are reports of several such occurrences in the literature. We had one patient who developed ventricular tachycardia and ventricular fibrillation while under the influence of quinidin but, fortunately for him, the attacks stopped when the quinidin was withdrawn and the patient lived for about seven years following these attacks. From these observations we have felt that quinidin has an action on the ventricular muscle as well as on the auricular muscle. I have used quinidin rather extensively in older persons who have developed paroxysmal attacks of auricular tachycardia or auricular fibrillation with considerable success. It is also of value in controlling extrasystoles either in the auricles or ventricles, but more especially in the former. I have given it in combination with strychnia according to the method suggested by Wenckebach with good results.

During the last few years we have come to appreciate the fact that larger doses of digitalis can be given to patients with myocardial failure and chronic passive congestion, with or without auricular fibrillation, than it was our custom to give in the past. However, I do not subscribe to the Eggleston method of giving massive doses of digitalis in the ordinary case. There are instances where strophanthin should probably be given intravenously or where large doses of digitalis should be given at once, but the danger of giving large doses to patients when first coming under observation is great, because in the occasional case one is not able to assure himself that the patient has not already been on digitalis and the massive dose given at once might cause his death. It is my practice to inquire first about the previous medication; to have the patient in bed and to give about 4 cc. every four hours until almost the full therapeutic dose has been given, making sure that the patient is seen by some member of the staff before the next dose is given. The dose is then reduced to 2 cc. every six hours, and when toxic symptoms are observed the drug is either stopped for twenty-four hours or continued with a dose of 1 cc. two or three times a day as indicated.

OVARIAN HEMATOMATA

WITH CASE REPORTS

By W. E. Hunter, M. D.
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Discussion *by Ezra C. Rich, M. D., Ogden; Ralph T. Richards, M. D., Salt Lake City; L. A. Stevenson, M. D., Salt Lake City.*

RECENTLY I have had under my care three patients who illustrate three unusual types of ovarian hematomata. These three patients presented such diverse symptoms that, even though they were carefully studied and consultants called, not one of the cases was definitely diagnosed until the time of operation.

Bovee says that no other organ in the body is so frequent a site of hemorrhage as is the ovary. Sampson of Albany states that fully 10 per cent of all women past thirty who come to operation for pelvic disease show some signs of hemorrhagic cystic disease of the ovaries. Many cases of ovarian hemorrhage are frequently overlooked and many cases are improperly diagnosed even after the abdomen has been opened.

I recall a case of a ruptured follicle of a serious nature which followed an industrial injury. The case caused considerable dispute concerning industrial liability, and the discussion between opposing physicians who were called to hear the case was quite acrimonious. I must confess I did not realize its true nature until I had a similar case in my own practice.

I recall other cases which I took to be ectopic gestation, which I have learned since were either hemorrhages from ruptured follicles or endometrial adenomas. I feel that most general surgeons are too prone to look upon intraperitoneal blood as *prima facie* evidence of ectopic gestation and be content with that diagnosis.

CLASSIFICATION

According to Phaneuf, ovarian hematomata can be divided clinically into three classes:

1. Cystic ovaries with hemorrhagic contents which become twisted on their pedicles.

2. Menstruating adenomas, variously known as perforating hemorrhagic (chocolate) cysts, endometrial cysts, endometrosis and implantation cysts.

3. Ovarian follicles and corpus luteum cysts which rupture and occasionally give rise to severe intraperitoneal hemorrhage.

ETIOLOGY

The cause of hemorrhage in the first variety can easily be understood. The blood supply becomes interfered with, the smaller vessels break and hemorrhage occurs. Most of these cases are variously diagnosed as appendicitis, renal colic, salpingitis or ectopic gestation.

In the second variety the bleeding is a physiologic process. There is either an embryonic inclusion of Müllerian tissue or a direct implantation of endometrial tissue, according to Sampson, which imitates the menstrual cycle of the mother tissue lining the uterus. These cases are much more frequent than is commonly supposed. They are often the cause of unexplained backache and dysmenorrhea. They are seldom diagnosed be-

fore operation and at operation are erroneously diagnosed as malignancy, pelvic inflammation or ectopic pregnancy.

In the third variety there is hemorrhage from the fragile vessels which nourish the developing egg or corpus luteum. According to Schumann there is no evidence of peri-oöphoritis or any other demonstrable morphologic change in the tissues. He thinks there might be a probable arteritis of obscure origin. Novak believes it is some form of physiological degeneration of the perifollicular vascular wreath of blood vessels. He also says that the principal predisposing factors (as might be expected) are conditions that bring about hyperemia of the ovary, with engorgement of its vessels. He has collected forty cases in literature of this type, showing intraperitoneal hemorrhage varying from one tablespoon to as much as two liters of blood. Trauma from coitus, bimanual examinations or trauma from external forces have been known to cause such hemorrhage.

CASE REPORTS

Case 1—The first patient was a fleshy, married woman, thirty-one years of age. After the birth of her child, then four months old, she had suffered from three attacks of sharp pain in the left abdomen. During this interval she had nursed the baby and had menstruated but once, about two weeks before the onset of the present attack. These attacks were about one month apart. She described them as lasting but a few minutes and as following a feeling of discomfort in the lower abdomen. Both husband and wife denied the possibility of pregnancy. No intestinal or urinary disturbance existed.

On June 17, she was awakened out of a sound sleep by a severe pain in the left midabdomen. She felt slightly nauseated but did not vomit. The pain gradually lessened but the lower abdomen remained rather sore. At 11 a. m. she had another attack, so severe that she cried out in agony.

When I saw the patient, after two of the attacks, she was feeling quite comfortable but was afraid of a subsequent attack. One hour later she was quite comfortable, but four hours later she had another attack. Physical examination at that time was negative, except for slight tenderness in the left lower quadrant. There was no fever and no bleeding from the uterus. The next morning the patient was seen in consultation by an internist, a general surgeon and genito-urinary specialist. A tentative diagnosis of renal calculus was suggested at this time, although the urine was negative. Several days later I saw the patient in the office. At that time a small definite mass was felt anterior to the uterus in the position of the bladder. During this examination she had one of her attacks of pain. There was no doubt about the severity of the pain at this time. She was then sent to the hospital for observation. While in the hospital the mass in the region of the bladder began to increase in size and operation was decided upon. Temperature ranged around 100 degrees; the white blood cell count was 28,000 and 22,000 on two different occasions; the urine showed a very faint trace of albumin.

Pathological Findings—On opening the abdomen a small amount of blood-stained fluid escaped and a tense, gangrenous ovarian cyst, the size of a large orange, twisted on its pedicle, presented. It was not adherent and was easily removed. The pathologist described the tissue as an ovarian cyst, roughly 10 cm. in diameter, the capsule of which was grayish red and contained serous fluid and blood-clots. Pathologic diagnosis was: hemorrhagic ovarian cyst.

Comment—One of the interesting features of this case was the recurrent attacks of pain, high up the abdomen rather than in the region of the ovary, and simulating renal colic so closely that one of the consultants insisted that the case could be nothing else. It was not until the mass in the region of the bladder was definitely tender and palpable that the attention was definitely focused in the pelvis.

Case 2—The second patient was a spinster, age thirty-six years. Her periods had always been regular, but recently they had become more profuse and more painful. For the past two months she had noticed a fullness in the lower abdomen associated with backache and urinary frequency. She thought the mass had grown larger recently and that she had lost some weight from worry. Vaginal examination was impossible and bimanual rectal examination revealed a large, apparently solid tumor, about the size of a five months' pregnancy, in the region of the uterus. The tumor was fixed and was high in the pelvis. The cervix could be felt through the rectovaginal wall, but the body of the uterus could not be made out. The diagnosis of fibromyomata was made and operation was advised. The patient refused operation at this time, but returned two months later with the observation that the tumor had increased in size or else she had lost weight from worry. (After the operation she stated that the mass appeared to become larger at the menstrual periods.)

Pathological Findings—On opening the abdomen, a large bluish-black cystic left ovary which filled the whole of the pelvic cavity was found. Adhesions held the mass securely in the pelvis. On attempting to free the ovary from its attachment to the sigmoid and the posterior leaf of the left broad ligament, the cyst was ruptured and its chocolate-like contents spilled over the field of operation. After its removal the posterior cul-de-sac was found to contain many firm, nodular adhesions. The right ovary was apparently normal. Two small fibroids were also removed from the posterior surface of the uterus.

Unfortunately the pathologist, in a single section of the sac, failed to find any glandular tissue. This is not uncommon, for in some of the larger cysts the endometrial tissue is entirely absent except at the point of perforation, which is the area of attachment. From the clinical story and operative findings the case was clearly that of a chocolate cyst of the ovary, with pelvic implants.

Comment—This case was particularly interesting because of the recent work of Sampson and others on the causes of certain peculiar, benign growths in the pelvis. He was the first to recognize the similarity of the contents of chocolate cysts and that of retained menstrual secretions which occur in girls with imperforate hymen or in women with atresia of the vagina. Sampson found that these cyst walls are lined with typical endometrial tissue. This opened up a new field of study and has thrown additional light on other unexplained pelvic conditions. At present we find endometrial implants in the surface of the uterus or the surface of fibromyomata, plastered over the ligaments of the uterus, causing firm adhesions and even extending into inguinal hernia sacs. They have been found implanted in abdominal scars following hysterectomy or cesarian section. Sampson makes the statement that perforating hemorrhagic cysts occur in 10 per cent of women past thirty years who require abdominal operation for pelvic disease.

Another interesting point about these cysts is their tendency to become adherent to the adjacent tissues where they perforate and then implant

themselves into the natural pockets of the pelvis, similarly to cancer or ovarian papilloma. The firm adhesions which they form are the result of the irritating action of the cyst contents upon the peritoneum. In some cases the firm nodular bands may even simulate malignancy.

Case 3—The third patient was a young lady, twenty-four years of age, who had been married one year and had never been pregnant. She gave a history of two or three previous attacks of pain in the right lower quadrant and had been told it was due to appendicitis. Her periods had always been regular. The last period was entirely normal and began twenty days before the onset of her present illness.

The attack, because of which she consulted me, began about 10 p. m. June 22, 1927, as a sudden, severe pain in the lower abdomen, associated with nausea and vomiting. About midnight the pain became unbearable. When I first saw her she was suffering from intense pain in the lower abdomen. She stated that she had fainted two or three times when she had tried to get up and that it hurt her to turn from side to side. The clinical picture was that of acute appendicitis with possible rupture. The abdominal wall was held tense and deep palpation elicited more pain in the region of the appendix than any other spot. The patient was taken immediately to the hospital where another surgeon saw her in consultation. Although the temperature was normal, we both felt that the case was so typical of appendicitis that a blood count was not necessary.

The incision was made directly over the appendix. On reaching the peritoneum the bluish shimmer of intra-abdominal hemorrhage was noted. On opening the peritoneum about one quart of bright, red fluid escaped. The bleeding point was immediately sought in the right tube which, to our surprise, was normal. A median incision was then made and the bleeding point searched for. Both tubes were found normal and both ovaries appeared to be free of disease. On closer examination a ruptured corpus luteum cyst was observed in the right ovary. This was quickly excised and the edges brought together.

Before closing the right rectus incision the appendix was examined more from curiosity than for removal because of the patient's condition. To our surprise the outer one-half was acutely inflamed and covered by a thin film of fibrin. To have overlooked the appendix would undoubtedly have proven disastrous.

Pathological Findings—The specimen consists of an appendix 5½ x 1 cm. and a small piece of ovarian tissue. The serosa and mucosa of the appendix were moderately injected. The walls were moderately fibrous. There was a small amount of pus in the lumen. At the distal end there was a small nodular projection, which was red and about 3 cm. in diameter. The ovarian tissue was a corpus luteum containing a small amount of blood. Microscopic sections of the pigmented area on the appendix and also the ovarian tissue failed to show any endometrial rests.

Pathological Diagnosis—Acute suppurative appendicitis. Corpus luteum cyst of ovary.

During the convalescence this patient's temperature remained elevated for about ten days. Otherwise it was uneventful. A very interesting feature during convalescence was the premature onset of menstruation following the removal of the corpus luteum which bears out recent statements regarding its inhibitory action on menstruation. It has long been noted by veterinarians that delayed estrum in cattle is due to a persistent corpus luteum. By grasping the ovary and rupturing the luteum cyst they are able to bring on estrum within forty-eight hours or, in the case of the pregnant cow, they are able to produce an immediate abortion.

Comment—Most cases of ruptured follicles or corpus luteum cysts are erroneously diagnosed as appendicitis, salpingitis or ectopic gestations. This case presents the unusual feature of having an acute appendicitis complicated by a ruptured corpus luteum. I am really unable to tell which was the primary lesion. It is barely possible that the cyst ruptured during one of the vomiting spells, although no one can say definitely that this was the case. We do know, however, that pelvic engorgement plus trauma has caused this condition.

CONCLUSIONS

These three cases are reported because they illustrate the three clinical types of ovarian hematomata and the difficulty of making a correct diagnosis. The diagnosis of such cases is usually confused with appendicitis, salpingitis, ectopic gestation, renal disturbances or pelvic growths. Many cases go unrecognized even at operation, being frequently mistaken for ovarian pregnancy. They constitute a definite surgical entity and should be considered in all diagnostic considerations of acute abdominal conditions of women.

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DISCUSSION

Ezra C. Rich, M. D. (2650 Washington Avenue, Ogden)—The classification Doctor Hunter has accepted would seem to indicate that each case studied can be charted. In his reported cases no fault can be found with the method he used, the time he took, or the interest he devoted to careful study and diagnosis. Yet in each case his correct diagnosis was not made till after the operation. Very few operators would have done better.

In the class of cases with twisted pedicle and hemorrhage into the cyst, I have been impressed with the amount of shock present without the visible loss of blood to account for the condition. The sense of weight these patients complained of over the site of the cyst, which weight can be confirmed many times by vaginal examination, has also been noted.

The pain in this class of cases is usually severe and early operation is often demanded by the patient.

The class of chocolate cysts furnishes one of the interesting subjects in surgery at the present time. The recent studies of Sampson, Bell, and other investigators has added a great deal to our knowledge. Diagnosis before operation is extremely difficult, yet a few signs and symptoms are significant. The pain is not so severe; the case does not seem so urgent; it is more likely to occur midway between the menstrual periods; the mass, as in Doctor Hunter's case, is unilateral; the implantations in Douglas' pouch should furnish some information and the age of the patient is the age of ovarian activity.

The rupture of corpus luteum cysts rarely gives rise to any serious symptoms. In a severe hemorrhage into the pelvis, there is usually considerable intestinal irritation, and enemas and bowel movements are quite painful. As in Doctor Hunter's case, severe hemorrhage demands immediate operation.

Ralph T. Richards, M. D. (Salt Lake Clinic, Salt Lake City)—It is comforting to learn from Doctor Hunter's paper that other surgeons encounter at operation pathological conditions in the pelvis unsuspected before.

Related to ovarian hematomata there is one subject which has practical diagnostic significance. I refer to ovarian congestion.

This matter was first drawn to my attention by a physician whom I met in consultation regarding a suspected case of acute appendicitis in a girl of eighteen. She had walked home from church with her fiance, and they had sat in the front room by themselves, whiling away the hours in mutual expression and

demonstrations of affection. During the evening she complained of nausea and pain and tenderness in the right lower abdomen. The physician called, he diagnosed acute appendicitis but postponed operation until morning.

In the morning a consultation was held, and after re-examining the patient, finding rectal tenderness on digital examination and definite abdominal tenderness on the right side, with moderate rigidity, two young enthusiastic consultants, of whom I was one, said, "Appendicitis—operate." The older man, in whom the family had more confidence, said, "The young lady has acute appendicitis that cannot be cured by operation. It is the kind that will get well when she is married."

This practitioner told us that he had seen quite a number of young girls who suffered the same symptoms from enthusiastic, prolonged, but perfectly virtuous displays of affection.

In July 1921, about midnight, a physician in the nearby suburb phoned me to meet him in the hospital; he was bringing in a young lady who had acute appendicitis who needed an immediate operation. On the way to the hospital something seemed to "give way," the patient stated, and the pain became easier. At my examination, I found a definite tenderness across the lower half of the abdomen with moderate rigidity. The tenderness was worse on the right side. Pulse was slightly elevated. Temperature normal. Patient looked pale and anxious, suggesting possibility of internal hemorrhage. Pelvic examination: virginal type, rectal finger against cervix caused pain on moving uterus. Could not outline uterus because of tenderness. No mass or fluctuation determined in cul-de-sac.

The history had not been satisfactorily obtained before examination. It was then reviewed and the patient admitted that for two hours preceding her trip to the hospital she had been caressed by her fiance. Diagnosis was made of ovarian congestion—possibility of ovarian rupture with hemorrhage. At operation the diagnosis was corroborated. The right ovary showed a recent rupture; slight oozing still evident, and about eight ounces of bloody fluid and clots in the cul-de-sac. Appendix normal. In all probability there may have been an ovarian hematoma, which was relieved by rupture at the time of her trip in the automobile.

On one other occasion I kept a girl who was going to get married, in bed one week prior to her marriage, because of pelvic pain and soreness. During this time I refused to allow her intended husband to see her. She went away on a week's honeymoon. On her return she told me that she had had no further tenderness or pain and she knew she wasn't going to have.

These cases are mentioned because they typify a condition little discussed medically or surgically; and yet ovarian congestion is of vital importance, as errors in diagnosis may lead to unnecessary abdominal operations.

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L. A. Stevenson, M. D. (903 Medical Arts Building, Salt Lake City)—I have read carefully and with interest the excellent paper on ovarian hematoma by Doctor Hunter.

I am sure many surgeons will confess to themselves, at least, they have been overlooking ovarian hematomas, especially those coming under second and third classification: menstruating adenomas, ovarian follicles, and corpus luteum cysts.

The ovarian cyst with a torsion of the pedicle is an event of not infrequent occurrence. The torsion may consist of one partial turn or there may be many complete turns. Many causes for this rotation have been ascribed, yet it is difficult to state a definite etiology in most cases. The results will depend upon the amount of compression on the vessels which supply the tumor. The veins being more compressible are the first to suffer, consequently the venous congestion becomes marked and sooner or later, depending on the degree of strangulation, the vessels give way and the blood is passed into the cyst wall and cavity, causing a rapid growth of the tumor: this associated with severe abdominal pain, pallor, and shock, is fairly characteristic of an ovarian cyst on a twisted pedicle. A previous knowledge of an existing cyst makes the diagnosis more easy. In my cases the clinical course has been tense and dramatic. I have no difficulty in recalling vividly, the symptoms, pathology and treatment in each case.

From an academic point of view, the etiology of menstruating adenomas is of special interest. The second clinical case as reported by Doctor Hunter is very important from many angles, and illustrates and confirms the research work of Sampson and collaborators on this subject. There seems no doubt that adenomyomas are of mucosal origin. The work of Chiari, Baraban, Pilliet, and especially that of Cullen through writings and illustrations of the subject, demonstrate that adenomyomas of the uterine wall have their origin from endometrial cells. He concludes there is an invasion of the wall of the uterus by mucosal cells, which are later cut off. This seems to be true of adenomas of the tubes also. Histological examination has demonstrated ciliated epithelium lining their cavities similar to tubal mucosa.

But what about the origin of extra uterine adenomas; on the surface of the uterus in the cul-de-sac, on the ovary, and within the ovary? They cannot be explained by the invasion and cutting-off process. There must be some other theory for their origin. Many theories have been given by various writers, but the one advanced by Dr. John A. Sampson, who is frequently referred to, seems the most logical and convincing. It is also quite in harmony with the clinical course of these cases. The fact that most of the hematomas of this class occur in women after thirty years of age would suggest the implantation theory, rather than the theory they were of Wolffian or Müllerian duct origin. If the latter theory were true it seems there should be as many of these hemorrhagic cysts of the ovary in early menstrual activity before thirty years of age. After thirty years we find more of the obstructive pathology to the natural passage of the menstrual flow. Retroversion and retroflexed uteri would be favorable to back flow of blood through tubes into the peritoneal cavity, carrying with it endometrial cells from the uterus and ciliated cells from the tube, which might be implanted on the surface of the uterus, ovary, and in the pelvis. These cells no doubt invade the ovarian tissue. The same causes produce menstruation, stimulate these implants to periodical bleeding, and as a result the ovarian hematoma, sometimes referred to as the chocolate cyst.

A brief résumé of Sampson's conclusions are: That ovarian hematomata are histologically of endometrial origin which reacts to menstruation.

The hemorrhage is periodically repeated as shown by fresh blood and pigment, the latter an evidence of previous hemorrhage.

The important consideration, it seems to me, in treatment, is to remove, as far as possible, without rupture or aspiration, all cysts of the pelvis. There may not be much harm done by the aspiration or rupture of a nonmalignant hematoma, but to soil the pelvic viscera with the contents of a papillomatous or malignant cyst, causing malignant implants, would be without doubt a serious mistake.

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Doctor Hunter (closing)—Doctor Richards has called my attention to a condition which I had almost forgotten. The literature is peculiarly inadequate regarding this condition. I recall two such cases of acute ovarian congestion ("stone gullion") following sexual excitement which I failed to recognize at the time. Happily the patients refused surgical intervention and saved themselves an operation. I feel sure that mild cases are frequently overlooked.

Recently I had an opportunity to observe the regurgitation of menstrual blood through the fallopian tubes. The patient had no acute symptoms of peritoneal irritation whatsoever. I stripped the tubes to make sure of the source of bleeding.

JUVENILE DIABETES—GROWTH AND STATURE CHANGES*

By James W. Sherrill, M. D.
La Jolla, San Diego

Discussion *by Francis Scott Smyth, M.D., San Francisco; Howard F. West, M.D., Los Angeles.*

THE problem of the management of the juvenile diabetic is one of the most worthy in the study and treatment of diabetes. On account of the rapid metabolic changes to which the child diabetic is susceptible greater responsibility is encountered than in the treatment of adults. Insulin has served to lessen this responsibility and has made it possible for the child diabetic to grow and develop normally.

LITERATURE LIMITED IN SCOPE

The incidence of juvenile diabetes is relatively small, comprising only about 5 or 6 per cent of the total number of diabetics. The literature contains very little upon this subject except a few reports of single cases. It is the object of this paper to record the changes in stature and weight of a group of sixty-two living diabetic children treated over a period of one to nine years, all of whom are receiving insulin at the present time. Joslin's report [1] of 395 diabetic children treated by him from August, 1898 to September, 1926 is the most extensive recorded. He divided his experience into three eras. The first, the Naunyn era, August, 1898 to January, 1914, comprised 61 cases, of whom 60 are dead. The second, the Allen era, January, 1914 to August, 1922, with 169 cases, of whom 117 are dead. The third, the Banting era, August, 1922 to September, 1926, with 165 cases, of whom only 18 are dead. W. S. Ladd reported thirty-four cases of juvenile diabetes. He emphasized the necessity of sugar freedom to insure the best growth in stature; and also the necessity of controlling body weight and diet. H. J. John [3] reports thirty cases of diabetes in children. Francis S. Smyth [4] reported nineteen cases and called attention to the importance of the removal of foci of infection. Priesel and Wagner [5] reported thirty-nine cases in detail. The diets prescribed by them contain much more fat and less carbohydrate than advocated by any clinic in our country. Many of their diets contain 250 grams of fat and a few as much as 300 grams.

IDEAL STANDARDS IN TREATMENT

Complete freedom from active diabetic signs and symptoms, such as glycosuria, hyperglycemia and acidosis, has been chosen as the ideal standard for a general plan of treatment. The ideal plan also requires that the diabetic child's nutrition approach the theoretical normal standard as closely as possible. Normal nutrition was of course an impossibility in cases of any real severity under former diet treatment alone. These rigid requirements are of course not attained without some difficulty, but by adhering to conservative policies, and keeping in mind the known benefits derived from careful diet application previous to the discovery of insulin, the mild cases of diabetes will be kept mild, and complications will be avoided in the severe.

There are numerous reasons for insisting upon conservative dietary restriction and freedom from glycosuria and hyperglycemia. That diabetes is due to deficiency of the internal secretion of the islands of Langerhans, and that treatment should aim at relieving overstrain of the weakened assimilative function, is generally accepted. Experience has taught us that downward progress may be expected when treatment is relaxed to permit glycosuria for any length of time. Injury from improper diet and breaking of diet is much more quickly demonstrated in juvenile cases than in older persons. Formerly cases of almost hopeless severity could be prevented from further downward progress by relieving glycosuria and hyperglycemia for sufficient period of time to allow regeneration of island function, and tolerance improved with continued relief from pancreatic overstrain.

PATHOLOGY OF DIABETES

Sufficient experimental work on the pathology of diabetes has been conducted to demonstrate progressive destruction of insular tissue during active diabetes. Weichselbaum and Stengel in 1901 showed that degeneration in the form of vacuolative hydropic changes occurred in the islands of Langerhans and that the phenomenon was specific in diabetes. Allen [6] showed that the vacuolative changes varied with the clinical condition. During unchecked severe diabetes vacuolative changes began in four to seven days and reached a maximum in about a month. Within six to eight weeks all beta cells may have disappeared from the pancreas. Copp [7] demonstrated that the hydropic degenerative changes of the island cells are reversible when functional strain is relieved by the administration of insulin, provided hyperglycemia was kept absent. The vacuolated cells recover normal form and granulation within about two weeks after active diabetes is brought under control. Keeping these pathological facts in mind one realizes how important it is to insist upon well-balanced diets to insure complete sugar freedom in both blood and urine at all times.

DIAGNOSIS OF DIABETES MELLITUS

The data included in this paper are based on living children who are known to have true diabetes mellitus for considerable periods of time, and do not include borderline or doubtful cases. The diagnosis of diabetes in children is relatively easy since the classical signs, polydipsia, polyuria and polyphagia and loss of weight are usually strikingly in evidence, in contrast to doubtful diagnostic signs such as weakness, fatigue and vascular degenerative processes as seen in the elderly. The most important diagnostic sign in children is thirst. I cannot recall a single instance of true diabetes in a child who did not have this definite sign; while on the other hand the majority

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of benign glycosurias in children are not associated with changes in water balance. However, any child with glycosuria must be considered diabetic until the contrary is proven.

RELATION OF INSULIN TO DIABETIC COMPLICATIONS

Statistical data of the number of living diabetic children under treatment with insulin as compared with those who died while receiving insulin are of very little importance. The cause of death is usually coma and the reasons are thoroughly evident. The important questions are: "Will the diabetic child of today develop prematurely the common latent complications of diabetes?" and "Can normal growth, height, weight and sexual development be obtained with insulin?" The first question deserves immediate careful consideration, because the future physical welfare of the diabetic child, ten to twenty years hence, may in a great measure be determined today. The common latent complications such as neuritis, retinitis, carbuncles and gangrene occur most commonly in the diabetics who have been careless with diet and have failed to keep blood and urine tests clear. For the most part complications occur in cases of long standing where the initial mildness of the disease permitted a fair glycosuria; the case later becoming severe and finally resulting in the distressing complications mentioned. The inherent nature of diabetes signifies a slowly progressing condition which later in life produces degenerative lesions of the extremities and eyes. Emphasis may be placed upon the fact that diabetic complications rarely occur in cases under thorough dietetic control, and the prevention of complications which are the chief cause of suffering in diabetes is worth the privation of careful diet. Experience with insulin thus far has assured us that the diabetic child can live and will live, and that his expectancy is probably the same as that of his nondiabetic brother. Knowing his predisposing susceptibility to latent diabetic complications, and something of prophylaxis, may we not expect to avoid complications in later years by insisting upon careful measures now?

Diabetic children sooner or later must be treated with insulin. The time of beginning treatment depends principally upon the severity of the case. Some mild ones may forego its use for several months. The quicker insulin is begun the better the final result, because good nutrition is more easily maintained. The musculature of the mildly diabetic child is firm, his complexion clear, and his strength and endurance almost equal to the normal. If he is treated by dietary methods alone for any length of time he soon loses this good muscular tone, the subcutaneous tissues become flabby and pudgy, with retained fluid, and his color becomes pale and sallow. Although insulin restores the body weight and strength in such cases there remains an unmistakable diabetic appearance which has been described as simulating hypothyroid or hypopituitary conditions. By insisting upon the early use of insulin patients may not only be controlled better from the standpoint of smaller insulin dosage, but better nutrition and management is insured.

METHODS OF TREATMENT AND EDUCATION OF PATIENT

Initial treatment should never under any condition be inaugurated with sudden alteration or restriction of diet. The most common mistake is usually sudden restriction of carbohydrate. Fat is the one article of diet which should be restricted first, irrespective of whether acetone bodies are present or not.

Education of the diabetic child or of any diabetic is the surest insurance for success in management. Diabetes is probably the only disease of which the patient should know all about his condition and how to remedy it. Unless the physician educates his patient and teaches him the fundamental principles of diet, insulin dosage and injection, how to make his own urine test, and the dangers of coma and how to prevent it, he may later be considered a responsible party for the patient's death. His responsibility does not end with education. By means of a careful follow-up system he should obtain reports at definite stated intervals to make sure there is no tendency to relax treatment or neglect urine tests. We have used with great satisfaction a "home report" sheet for recording the diet, body weight, daily urine tests and insulin dosage. This report is brought by the patient at each office call or mailed in at specific times.

COMPLICATION OF OBESITY

The greatest complicating factor in diabetic treatment is obesity. The fact that the laity usually consider obesity a sign of general well-being frequently makes it difficult at first for the physician to have his patient keep the weight at or slightly below the normal standard. Body fat is simply a parasite which requires excessive amounts of insulin and adds another risk to an already hazardous condition. The fat child is the one who suffers most from hypoglycemic reactions and has the greatest difficulty in keeping urine tests clear for any consecutive period. An analysis of the coma deaths reveals that 80 per cent were more than 20 per cent overweight. Undernutrition is a serious handicap to the diabetic child, but at the same time overnutrition is more dangerous, and experience has proven that if a choice should be made the former is the more desirable.

The best relief for obesity lies in adequate exercise. The utilization of sugar is facilitated and the tendency to abnormal blood sugars diminished. Obesity is certainly not an etiological factor in juvenile diseases. Only two patients in this series could be considered obese at the onset.

COÖPERATION OF PATIENT NECESSARY

The faithful diabetic child is the easiest of all diabetics to treat, and the unfaithful the most difficult. The former considers his diet part of his religion, and his fidelity exists so long as he is given encouragement. The management of the

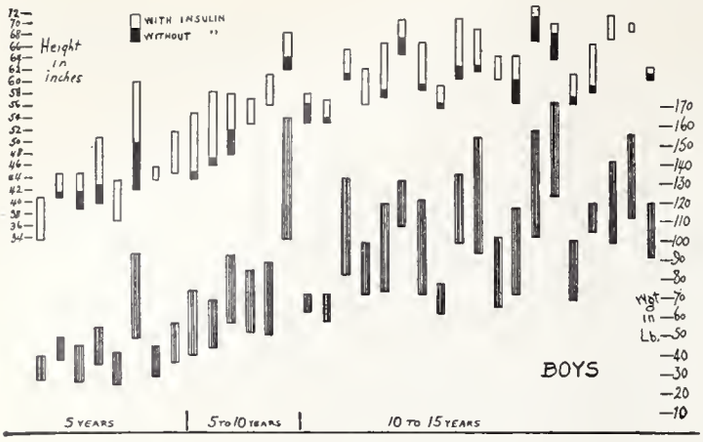

Chart 1

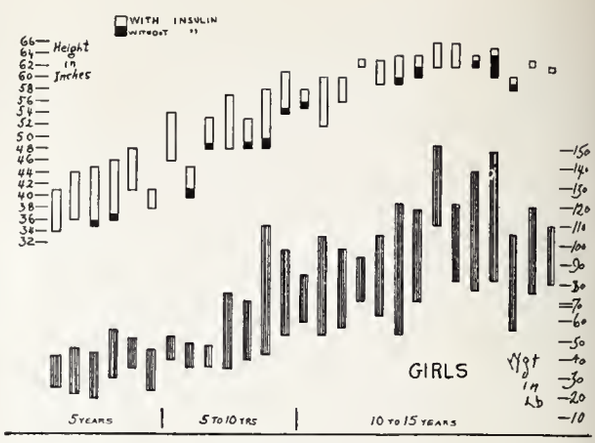

Chart 2

The solid black portions of the vertical columns represent the height at onset of diabetes and on beginning insulin treatment. The upper white portions of the same columns indicate the growth in height under insulin therapy. The corresponding series of ruled vertical columns represent the weight in pounds on beginning insulin and the final weight.

unfaithful child, like the management of the illiterate, is frequently a hopeless task. Children up to the age of twelve coöperate best, while after the age of twelve there is a tendency to become careless and to break away from prescribed measures. There is little question but that diabetic children are precocious, keen and mentally alert. Discipline, exercise, hygiene and education should be precisely that of normal children. One should adopt the practice of encouraging the child to prepare for proper school and college training. He should consider early his future work or profession, keeping in mind that sedentary occupations are distinctly contraindicated.

GENERAL DIETETIC PRINCIPLES

The use of rigid diet formulas for determining the required diet for any diabetic patient, juvenile or otherwise, should be discouraged. It not only restricts individuality, but forces ill-balanced diets upon many diabetics. Imagine one's embarrassment upon attempting to give a logical explanation for assigning the same diet to a chubby fat boy and a tall slender girl because they are of the same age and weight. The diet must be arranged to suit the needs of body requirement; fat and carbohydrate being added or restricted as obesity or undernutrition demand.

THE PROTEINS

In assigning the diet, protein deserves the first consideration. It is the one food substance which has the advantage of giving maximum strength and energy with a minimum of carbohydrate and calories. The average child does well and maintains his strength on about 65 grams. They seem to thrive best on animal protein, but it may be used as individual preference dictates. The protein requirement of children is in indirect ratio to the age. Holt estimated the requirement at about 4 grams per kilo in infancy; 2 to 4 grams in childhood; and 2 grams in adolescence. Bartlett [8] recently made a series of observations in diabetic children from 4 to 14 years of age to determine the minimum amount of protein required to establish a positive nitrogen balance and at the same time permit adequate growth in stature, weight and development. In order to establish the requirement he kept in mind the various protein-sparing factors. It is interesting to note that he could establish maintenance with the surprisingly small amount of .6 to 1.0 grams per kilogram body weight. Since we are all aware that the diabetic child gains easily in weight but

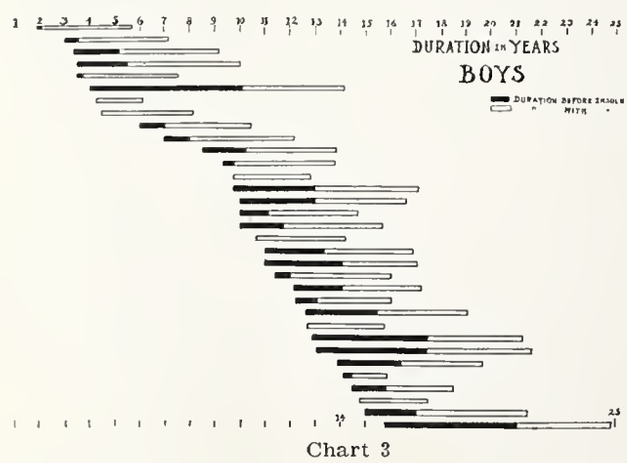

Chart 3

Chart 3—Duration of Diabetes in Years, Boys. The left-hand heavy black columns represent the age at onset of diabetes and the age on beginning insulin treatment. The white portions of the columns represent the duration of life under insulin therapy.

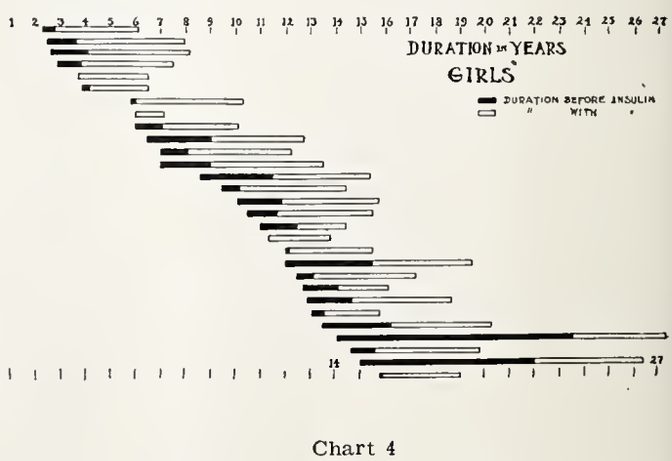

Chart 4

Chart 4—Duration of Diabetes in Years, Girls. The left-hand heavy black columns represent the age at onset of diabetes and the age on beginning insulin treatment. The white portions of the columns represent the duration of life under insulin therapy.

not so much in height, and that protein is one of the chief essentials for the growth of bony structure, one must make sure of adequate protein allowance in the growing child. Horace Gray [9] has made a good compilation of over five hundred diabetic children's diets in various clinics. He called attention to the fact that the expression of diets in terms of calories per kilo and grams per kilo body weight probably gives the most accurate information. He found the average protein assignment to be 2.7 grams per kilo in the first decade. The average protein allotment of the cases here reported is 2.5 to 3 grams per kilo, and may be responsible for the relatively good gains in height. Protein is the ideal food for conserving skeletal musculature; it prevents hunger and helps control obesity.

THE CARBOHYDRATES

Carbohydrate has a stronger glycosuric effect and creates a higher insulin requirement than the caloric equivalent of any other kind of food.[10] There is no constant scale of insulin dosage for the assimilation of any given quantity of carbohydrate. The ratio between grams of glucose and units of insulin varies widely not only in different patients, but also in the same patient under different conditions. Glycosuria and insulin requirement are governed to a very important degree by the total caloric effect of the diet. Joslin has found it safest to keep the ratio of carbohydrate to fat at about 1 to 1; and his "carbohydrate allowance rarely exceeds 100 grams." The giving of promiscuous amounts of carbohydrate to the diabetic encourages carelessness in diet and very soon all discipline is relaxed with generally poor results. Very soon he is willing to risk more fat and total calories and grows obese, the final end-result with which, sad to relate, we are all familiar. Exaggerated amounts of carbohydrate prevent careful stabilization of the blood sugar. The rapid flooding of the organism brings about prompt glycosuria, which is soon followed by hypoglycemia secondary to the high insulin dosage required in the attempt to prevent it. Children require proportional higher carbohydrate than the adult, and carbohydrate should be given so long as glycosuria and hyperglycemia can be avoided. In the early stages it is a very simple matter to give large amounts of carbohydrate, 200 to 250 grams, with small amounts of insulin and still maintain sugar freedom, but when one recalls that diabetes is a progressive disease and tolerance is soon lowered, it is much better to insist upon lesser amounts of carbohydrate in the diet. The general idea that the normal person consumes 400 grams of carbohydrate per day most probably needs revision. The average consumption is probably 250 to 300 grams. In reviewing a series of patients under forced feeding it was found that only the exceptional one could consume more than 350 grams in spite of keen appetite and good digestion. Calculation of one's daily diet will probably lend emphasis on this point, so the generally accepted carbohydrate allowances prescribed by our leading authorities on diabetes hardly work a hardship on our diabetic patients. Eighty to one hundred grams of carbohydrate is a very liberal amount and permits comfortable existence. It is adequate for a small amount of starch and cereal, and is sufficient for a good supply of green vegetables and vitamins. Carbohydrate is the most palatable of all our food substances, and we are responsible to Doctor Banting for the wonderful gift which permits more comfortable existence for the diabetic.

THE FATS

Since diabetes is a disease of total metabolism rather than a disease of carbohydrate metabolism the question of fat in the diet must deserve early consideration on account of its high caloric value. The insulin requirement of the body is very greatly increased by the addition of fat to the diet. Increase in adipose tissue on the body demands a much larger insulin supply than a similar increase in skeletal or bony structure. The increased amount of adipose tissue not only requires extra insulin for the process of food storage and consumption, but the fat cells also consume it at a rapid rate during the process of anabolic and catabolic change. Ladd [2] showed that diabetic children may grow normally on diets which contain only 50 per cent of the total calories considered necessary for the normal child.

COMMENT ON TABLES AND CASE REPORTS

Table 1 is a compilation of data pertaining to age, height and weight changes, diet and insulin requirement of sixty-two living children who have been under treatment with insulin more than one year. Several cases are of remarkable interest on account of severity and longevity, both preceding insulin treatment and subsequently. Case 3 is probably the most severe, as shown by the meager diet necessary for sugar freedom for the thirteen months prior to the discovery of insulin and the high insulin requirement for the increased diet after insulin. Cases 11 and 33 belong in the same category. Case 54 developed diabetes at the age of 14 years and 2 months and adhered carefully to diet treatment for nine and one-half years. She was among the first to receive insulin in 1922. There was partial invalidism during the latter part of her pre-insulin treatment, but insulin has enabled her to almost double the body weight and to complete her collegiate work last year. Case 12 is equally as remarkable on account of the long duration of the pre-insulin treatment (six years) and the youthful age at onset (four years). Case 60 was treated for six years and Case 62, seven years without insulin. Charts 3 and 4 show graphically the age of onset of diabetes, years of treatment without insulin and duration of treatment under insulin.

Changes in Height—Formerly diabetic children grew very little in height if at all. A few mild cases increased a few inches, but all failed to keep pace with the normal child over any prolonged period. Several patients in this series grew three or four inches over periods of two to four years before insulin discovery. Case 12, patient grew

TABLE 1—*Compilation of Data Concerning Sixty-Two Children Under Treatment With Insulin for More Than One Year.*

CASE No.	SEX	AGE: At Onset Yr.	AGE: At Onset Mo.	AGE: At Beginning Insulin Yr.	AGE: At Beginning Insulin Mo.	AGE: Final Yr.	AGE: Final Mo.	DURATION: Before Insulin Yr.	DURATION: Before Insulin Mo.	DURATION: After Insulin Yr.	DURATION: After Insulin Mo.	HEIGHT (Inches): At Onset	HEIGHT (Inches): At Beginning Insulin	HEIGHT (Inches): Final	HEIGHT CHANGE (Inches)	WEIGHT (lb.): At Onset	WEIGHT (lb.): At Diagnosis	WEIGHT (lb.): At Beginning Insulin	WEIGHT (lb.): Final	WEIGHT CHANGE: Before Insulin	WEIGHT CHANGE: After Insulin	DIET: Maximum Before Insulin: Protein	Fat	CH.	Total Calories	DIET: Final, with Insulin: Protein	Fat	CH.	Total Calories	INSULIN (Units)
1	M	1	11	2	0	5	8		1	3	8	34	34	41	0 7	30	29	29	42	0	+13					50	95	45	1235	21
2	F	2	4	2	9	6	1		5	3	4	35	35	43	0 6	27	27	24	42	—3	+18	35	38	5	500	60	70	75	1170	24
3	F	2	6	3	7	7	11	1	1	4	4	34½	34½	44	0 9½	31	31	22	45	—9	+23	10	8	3	120	65	70	100	1290	60
4	F	2	7	4	1	8	2	1	6	4	1	34¾	36	44½	1¼ 8½	30	30	18	43	—12	+25	50	20	5	300	65	62	70	1100	17
5	F	2	10	3	10	7	6	1	0	3	8	36	36	46	1 9	33	33	29	55	—4	+26	40	44	10	600	80	80	85	1400	16
6	M	3	0	3	6	7	2		6	3	8	40	40¾	45	¾ 4¼	40	40	39	51	—1	+12	50	93	40	1200	65	75	80	1250	14
7	M	3	4	5	2	9	2	1	10	4	0	39½	42	44½	2½ 2½	41	30	28	47	—2	+19	35	47	10	600	65	140	91	1880	25
8	M	3	6	5	6	10	0	2	0	4	6	40½	43¾	51	3¼ 7¼	40	40	37	56	—3	+19	50	93	15	1100					45
9	M	3	6	3	8	7	6		2	3	10	37	37	44	—0 7	30	30	26	43	—4	+17					80	84	80	1400	22
10	F	3	8	3	8	6	6		0	3	5	41	41	55½	0 8½	38	38	34	50	—4	+16					80	100	100	1620	24
11	F	3	10	4	2	8	6		4	4	4	37	38½	43¼	1½ 4¾	32	28	23	52	—5	+29	30	18	5	300	70	79	70	1260	66
12	M	4	0	10	1	14	2	6	1	4	1	42½	50	60	7½ 10	33	33	50	96	+17	+46	60	107	50	1400	80	109	150	1600	50
13	M	4	3	4	3	6	1		0	3	10	44	44	46	—0 2	39	30	30	45	0	+15					75	90	90	1570	36
14	M	4	6	4	6	8	2		0	3	8	45	45	52	0 7	42	42	38	58	—4	+20	60	80	60	1200	80	129	80	1900	10
15	F	5	10	6	0	10	4		2	4	4	46	46¾	54	¾ 7¼	40	40	38	51	—2	+13	50	82	15	1000	70	94	90	1500	34
16	M	6	0	7	0	10	5	1	0	3	5	44	45	54¾	1 9¾	43	41	41	76	0	+35	60	60	30	900	85	120	85	1800	97
17	F	6	0	7	1	10	2	1	1	3	1	40	41	44½	1 3½	38	38	35	48	—3	+13	50	33	25	1200	70	71	70	1200	14
18	F	6	0	6	0	7	1		0	1	1	44	44	45	0 1	36	36	36	47	—0	+11					60	85	85	1350	10
19	F	6	6	9	0	12	9	2	6	3	9	48	49	53	1 4	46	46	43	85	—3	+42	50	93	15	1100	60	75	75	1215	12
20	M	7	0	8	0	12	2	1	0	4	2	46	47	56	1 9	45	45	45	70	0	+25	55	102	40	1300	70	128	90	1800	18
21	F	7	0	9	0	13	6	2	0	4	6	48	48½	56¾	0 8¼	47	47	35	75	—12	+40	50	82	15	1000	90	82	100	1500	22
22	F	7	0	8	1	12	2	1	1	4	1	48½	49	53	½ 4	50	40	39	70	—1	+31	55	31	15	800	70	65	70	1150	50
23	M	8	7	10	3	13	8	1	8	3	5	48	52	57½	4 5½	75	75	58	94	—17	+36	60	120	45	1500	90	82	44	2000	22
24	F	8	8	11	5	15	5	2	9	4	0	48	50	57½	2 7½	56	56	42	110	—6	+68	60	100	40	1300	80	90	93	1500	74
25	M	9	4	9	7	13	7		3	4	0	53	53½	57	0 3½	62	52	53	87	+1	+34	70	158	50	1900	100	151	110	2200	26
26	F	9	6	10	2	14	5		8	4	3	55	56	61	1 5	72	52	52	97	0	+45	55	109	25	1300	80	117	80	1700	31
27	M	9	8	9	8	12	10		0	3	2	56	56	60½	0 4½	62	52	52	90	0	+38					75	129	90	1820	20
28	M	9	8	12	0	17	2	3	4	4	2	60	62½	68	2½ 5½	115	115	103	167	—12	+64	60	129	30	1500	80	123	80	1750	54
29	M	10	0	13	0	16	6	3	0	3	6	53	56	58	3 2	80	70	64	73	—6	+9	60	122	40	1500	85	120	110	1860	30
30	M	10	0	11	1	14	7	1	1	3	6	53	54	57¼	1 3¼	70	65	59	73	—6	+14	65	142	40	1700	70	135	75	1800	34
31	M	10	1	11	9	15	8	1	8	3	11	60	61	65½	1 4½	90	90	83	133	—7	+50	55	122	20	1400	80	113	90	1700	90
32	F	10	1	11	10	15	10	1	9	4	0	55	56½	58½	1½ 2	75	66	58	84	—2	+26	60	120	20	1400	70	104	70	1500	30
33	F	10	6	11	7	15	6	1	1	3	11	52	52	60	0 8	72	60	51	105	—9	+54	30	15	5	275	80	197	100	2500	66
34	M	10	7	10	7	14	2		0	3	7	56	56	52	0 6	72	73	73	100	0	+27					80	100	70	1500	72
35	M	11	0	13	3	16	11	3	3	3	8	57	58	65½	1 7½	90	76	73	120	—3	+47	60	120	20	1400	100	144	100	2100	40
36	M	11	0	14	1	17	0	3	1	2	11	64	67	70	3 3	120	117	108	132	—7	+24	70	129	40	1600	100	144	100	2100	36
37	F	11	0	12	5	14	5	1	5	2	0	56	60	60	4 0	58	59	59	98	0	+39	55	115	25	1350	75	106	60	1600	60
38	F	11	4	11	4	13	10		0	2	6	62	62	62½	0 ½	92	72	72	95	0	+23					80	120	100	1800	25
39	F	12	0	12	1	15	6		1	3	5	59	59	63	0 4	72	62	62	114	0	+52	60	120	20	1400	75	100	75	1500	63
40	F	12	0	15	6	19	7	3	6	3	7	59	60	64	1 4	77	73	53	122	—20	+69	40	64	15	800	85	100	100	1640	55
41	M	12	2	14	1	17	2	1	11	3	1	58	59½	66	1½ 6½	83	73	72	123	—1	+51	70	113	50	1500	80	118	80	1700	20
42	M	12	2	13	0	17	0	0	10	4	0	55	56	65	1 9	82	82	63	117	—9	+55	65	100	35	1300	80	140	80	1900	30
43	F	12	6	13	1	17	1	0	7	4	1	53	53	57	0 4	62	62	55	70	—7	+15	50	102	20	1200	70	80	80	1400	25
44	M	11	4	12	0	16	0	0	8	4	0	60	62	70	2 8	105	98	99	135	+1	+36	90		100	2400	100	155	100	2200	34
45	M	12	7	15	6	19	1	2	11	3	7	61	61½	68	½ 6½	120	115	94	155	—21	+61	60	136	35	1600	100	150	100	2000	75
46	F	12	8	14	2	16	2	1	6	2	0	60	62	64	2 2	98	91	72	118	—19	+46	70	102	25	1400	85	151	85	2000	45
47	M	12	8	12	8	15	10		0	3	2	60	60	64	0 4		66	66	103	0	+37					80	150	80	2000	25
48	M	12	10	17	5	21	3	4	7	3	10	56	60	64	4 4	119	90	72	118	—18	+46	50	82	15	1000	90	120	90	1800	34
49	F	12	11	14	8	18	9	1	9	4	1	62	62	66	0 4	124	89	109	152	+20	+43	60	86	20		60	40	50	850	60
50	F	13	1	13	6	15	10		5	2	4	60	60	64	0 4	92	92	81	121	—11	+40	70	120	60	1600	70	80	111	1600	42
51	M	13	1	17	5	22	7	4	4	5	2	56	70	72	4 2	138	111	103	158	—8	+55					100	150	125	2250	40
52	F	13	6	16	3	20	3	2	9	4	0	62	63	64	1 1	104	104	76	138	—28	+62	40	58	5	700	60	70	120	1300	86
53	M	13	10	16	3	19	9	2	5	3	3	63	67½	69	3½ 1½	110	110	125	172	+15	+47	60	120	20	1400	90	164	90	2200	62
54	F	14	2	23	7	28	4	9	5	4	9	60	64	65½	4 1½	90	90	81	148	—9	+67	50	96	10	1100	75	96	85	1504	38
55	M	11	2	14	4	15	8		2	1	4	56	57	61	1 4	75	75	69	100	—6	+31					80	104	60	1500	26
56	M	14	6	15	10	18	6	1	4	2	8	58	59	66	1 7		88	105	120	+17	+15	65	127	25	1500	70	132	35	1400	10
57	F	14	8	15	7	19	10		11	4	3	58	59	60	1 1	72	72	56	105	—18	+49	45	76	10	900	80	80	106	1600	64
58	M	14	9	14	9	17	6		0	2	9	67	67	70¾	0 3¾	100	99	99	142	0	+43					100	135	100	2100	42
59	M	15	0	17	0	21	4	2	0	4	4	70	70	70½	0 ½	120	120	113	157	—7	+44	60	153	20	1700	90	146	80	2000	36
60	M	15	0	21	0	24	10	6	0	3	10	63	64	65¼	1 1¼	120	95	91	120	—4	+29	65	120	15	1400	95	160	100	2200	38
61	F	15	0	15	11	19	0		11	3	1	62	62	62	0 0	80	75	75	120	0	+45					90	120	100	1840	40
62	F	15	0	22	0	26	0	7	0	4	0	62	63	63	1 0	110	110	78	110	—32	+32	50	74	20	950	70	75	70	1210	60

four inches in one and three-fourths years, and Case 48, patient grew four inches in four years and seven months without insulin. Under insulin several remarkable increases in stature have been made; particularly Case 42, patient with an increase of nine inches in four years, and Case 35, patient with eight inches in three years and eight months. The best gain in height was noted in Case 12 patient, namely, ten inches in four years. This mushroom-like growth is in keeping with the experimental work of Osborn and Mendel [11] in which they noted rapid compensatory growth in rats after periods of suppression of growth. Despite failure to grow, average normal size may be regained provided renewed feeding is commenced before the usual period of growth is ended. A glance at Charts 1 and 2 shows the contrast of growth in height after renewed feeding in the younger children as compared with the older ones. The average increase in height of children 1 to 5 years of age was 6.3 inches; 5 to 10 years, 4.3 inches; 10 to 15, 3.0 inches (Table 2). Case 54 showed the least increase

TABLE 2—*Summarizes average duration, height change, weight change before and after insulin administration. The maximum and minimum changes are also tabulated. The age refers to the age at onset of diabetes.*

AGE		DURATION before insulin yr.mo.	DURATION after insulin yr.mo.	CHANGE IN HEIGHT before insulin (inches)	CHANGE IN HEIGHT after insulin (inches)	CHANGE IN WEIGHT before insulin	CHANGE IN WEIGHT after insulin	INSULIN units
1–5	Average	1–0	3–8	¾	6.3	–4	+19	23
	Maximum	6–1	4–6	8	9.0	–12	+46	50
	Minimum	–1	2–4		3.0		+12	10
5–10	Average	1–3	3–8	1	4.3	–4	+35	34
	Maximum	3–4	4–6	4	9.0	–17	+68	50
	Minimum		1–1		3.0		+11	10
10–15	Average	2–1	3–6	1.6	3.0	–7	+40	44
	Maximum	1–2	4–3	4.	8.0	–32	+67	90
	Minimum		1–4		.5		+9	10

in height. She has grown only one inch after almost five years of insulin treatment. This might be expected on account of her age; the period of growth being passed during the nine and one-half years of pre-insulin treatment.

Changes in Body Weight—It is a very easy matter for a diabetic child to increase in body weight, barring existing infections such as chronic sinusitis or antrum infections. The best treatment calls for restriction of the diet to keep the increase within normal standard limits. Joslin prefers an increase of approximately seven pounds a year, which is the average for the normal child. The children in this group increased at about that rate. Nine children in this series have more than doubled their body weight. The severity of several of the cases is shown by the tremendous weight lost under pre-insulin treatment: Case 4, patient lost from 30 pounds to 18 pounds, or 40 per cent of the total body weight, within a period of one and one-half years, and Case 40, patient lost from 73 pounds to 53 pounds, or 36 per cent of the total body weight, during three and one-half years of pre-insulin treatment. The greatest

TABLE 3 — *Shows the percentage of deviation above and below normal standard weight. The age refers to the final age of the patient. Calculations taken from T. D. Wood.*

Present Age	No. Cases	Percent below Standard Weight			Normal Average Zone Per Cent	Percent above Standard Weight			
Yrs.		30–21	20–11	10–6	+5–5	6–10	11–20	21–30	31–40
5– 6	5				3	1	1		
7– 8	8				5		2	1	
9–10	3	1		1		1			
11–12	5		1	1	1	1		1	
13–14	9		2	1	4	1	1		
15–16	11			1	8	1		1	
17–18	7			1	4			2	
19–20	6				2	1	2	1	
21–22	2				2				
23–24	1					1			
25–26	1				1				
27–	1						1		
Total	59								

gain in weight in this series is Case 40, patient a girl, who increased from 53 pounds to 122 pounds in a period of three years and seven months. She is now only 3 per cent above normal standard weight for her height and age.

Table 3 shows the deviation from normal standard weight of fifty-nine of the children in this series. Three cases are not included because of underweight, and tables for calculation are not available (Cases 7, 17, 43). The majority of cases are within the normal average zone, but several show marked deviation from the desired standard. Case 15, patient is 27 per cent below normal standard weight, and has always been below normal weight.

Table 1 records the maximum diet which these children were able to consume during their existence without insulin. By maximum diet is meant the diet which they were able to consume satisfactorily for a period of several months without appreciable hyperglycemia and glycosuria. In some instances the maximum diet is not recorded since the case was admitted with acidosis or coma and insulin treatment was commenced immediately. The diet under insulin treatment is also recorded. It is the diet on which the patient is able to remain entirely or almost a glycosuric for several weeks or months. Table 4 gives the average diets in grams per kilogram body weight and the average total diet for the three groups. The carbohydrate-fat ratio is approximately 1:1 for

TABLE 4—*Summary of the final diets of 62 living diabetic children, with special reference to protein, fat and carbohydrate allowance per kilogram body weight.*

FINAL RESULTS (*Average*)	1 to 5 years	5 to 10 years	10 to 15 years
Weights, pounds	51	83	117
Protein, gm. per kg.	3.0	2.0	1.5
Fat, gm. per kg.	3.9	2.7	2.1
Carbohydrate, gm. per kg.	3.7	2.4	1.6
Calories, per kg.	60	43	33
	P F CH Cal	P F CH Cal	P F CH Cal
Average Diet in Grams	70 91 86 1400	77 100 90 1600	82 121 85 1700

children 1 to 10 years of age and from 10 to 15 years the ratio is 1.6: 2.1. Table 2 summarizes the average duration of diabetes before and after insulin, and the changes in height and weight of the three groups.

A large number of the patients in this series were treated by the author in association with Dr. Frederick M. Allen and thanks is due him for the final summary of these cases.

SUMMARY

The final results of sixty-two living children under insulin treatment is recorded. All are cases which have been under treatment for more than one year. Several of the cases had been treated by diet measures alone for five years or more before the introduction of insulin. The best treatment requires constant sugar freedom and regulation of diet to keep the body weight within normal standard limits. Obese diabetic children are difficult to control. Sugar freedom is best maintained when the carbohydrate-fat ratio is approximately 1:1. Moderate carbohydrate diets permit normal increase in body weight and obviate the difficulties of hypoglycemic reactions and glycosuria. Patients should be instructed to take as much insulin as possible without inducing hypoglycemia, rather than use as little insulin as possible to avoid glycosuria.

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DISCUSSION

Francis Scott Smyth, M. D. (University of California Hospital, San Francisco)—The data presented by Doctor Sherrill is of extreme value insomuch as the number of diabetic children, carefully followed by him, permits conclusions which might be unwarranted from a smaller series. It has seemed to me, however, that not a few juvenile diabetics may lack the typical polyphagia as a symptom and that loss of appetite may indeed be found with polydypsia and polyuria. Doctor Sherrill's figures are also at variance with Joslin's concept that the growth in height of diabetic children is usually below the normal.

Naturally I am enthusiastic over this piece of work since it is in accord with my own ideas. The use of low amounts of carbohydrate to maintain a stability of blood sugar is particularly worth stressing. A high carbohydrate diet may be used on an elderly diabetic, but our experience leads us to believe that it is unsatisfactory for children. From our knowledge of the regenerative power of parenchymatous organs in children as well as from experimental researches, it would seem important to maintain a normal blood sugar even at the risk of occasional hypoglycemia. In fact some have advocated hypoglycemia as the best state for pancreatic regeneration. The education of patient and family is another item of importance. With it should be emphasized the necessity of developing a normal social instinct, lest by pampering the precocious diabetic child he capitalize his infirmity or become hypochondriacal.

One wishes that Doctor Sherrill might later on enlarge his study of these children and give a discussion of the various factors possibly concerned in the etiology of juvenile diabetes.

Howard F. West, M. D. (1032 West Eighteenth Street, Los Angeles)—Doctor Sherrill's paper covers one of the most important aspects of the treatment of diabetes. There is nothing more interesting than the problem of keeping the diabetic child not alive but normal. This is a new challenge given by insulin. The analysis of the records of this large series of children demonstrates that the attainment of this ideal in the great majority of instances is not impossible, and the results speak for the wisdom of the treatment pursued.

Two points in the paper are especially worthy of special emphasis: 1. Conservatism in diet and insulin prescriptions. Children are sensitive nervously and physically. Their blood sugar, for instance, may swing rapidly from one extreme to the other. Only the most careful management can keep them stable. The ideal diet would seem to be the lowest one that will provide the actual requirements (protein, mineral, vitamin and energy value) for normal development and the lowest insulin dosage consistent with control. Otherwise, as Doctor Sherrill has emphasized, periods of hypoglycemia and glycosuria are almost sure to be present in the same twenty-four hours. It is desirable, from the standpoint of normal metabolism, for the liver to store an adequate amount of glycogen. However, if the diet, and especially the carbohydrate, is in excess and the insulin dosage correspondingly large, excess glycogen will be stored during the periods of insulin activity only to be released as glucose at other periods with consequent hyperglycemia and glycosuria. This occurs typically during the later periods of the night.

2. Training. We frequently say that the success to be obtained with diabetic children depends most largely on the mother. She must be thoroughly trained and must be of the type that can and will exercise constant and wise supervision, not only in regard to the diet and general physical condition, but of almost equal importance that of moral training and discipline. The diabetic child should not be given the privileges of an invalid. He should be held to the same standards of development and behavior as any normal child. As he is apt to be precocious, and as his dietary and physical routines are so closely supervised, there is every reason for his being a truly superior child. The number of diabetic children on the honor rolls of their schools is evidence that this should be expected.

THORACOPLASTY—SURGERY OF PULMONARY TUBERCULOSIS*

By A. D. Ellsworth, M. D.
AND
John H. Pettis, M. D.
Fresno

Discussion *by Henry Hoit, M. D., La Vina; Leo Eloesser, M. D., San Francisco; Lewis D. Remington, M. D., Monrovia.*

PART I

MEDICAL ASPECTS, BY A. D. ELLSWORTH

SINCE thoracoplasty is a comparatively new procedure the reporting of even a small series of cases may help to throw light on its value.

The chief drawback of artificial pneumothorax has been that it can be used in only a small percentage of cases. In searching for means to overcome this difficulty, various operative procedures have been developed by surgeons; of these paravertebral thoracoplasty seems to be the most successful.

Statistics as to the frequency with which lung collapse is applicable are apt to be misleading, because they are usually based on selected cases. Unilateral disease, and cases free from adhesions, will be more common in institutions where only early cases are admitted.

Therefore it may be of interest to consider the statistics of a hospital where nearly all cases are advanced or far advanced. During a certain period, 222 patients were admitted. Of these, only sixteen were found for whom pneumothorax could be recommended. In three others, pneumothorax was done for intractable hemorrhage, making nineteen cases, or 8.5 per cent for both optional and compulsory pneumothorax. Four refused operation. In five pneumothorax failed on account of adhesions. In nine it was successful. Thus it was found possible to do pneumothorax in 50 per cent of the suitable cases, or in 4 per cent of the number of patients admitted.

Six patients, including all of the five in whom pneumothorax failed, submitted to thoracoplasty, and the promptness with which improvement followed seemed almost incredible. The plan of operation followed was that recommended by Alexander, namely, a preliminary phrenicotomy, followed by a thoracoplasty in two stages. The operative technique will be discussed by Doctor Pettis, who deserves the credit for that part of the work.

On account of the supposed dangers of this operation it has generally been regarded as a last resort. I believe that this attitude will change as our experience increases, and that we may come to offer this chance of recovery to those who have earlier lesions which continue to be active in spite of the rest cure. By waiting too long we have poorer surgical risks.

OPERATIVE INDICATIONS

Given a patient with predominantly unilateral disease, the result of rest and diet is at first determined. If fever and loss of weight continue it may be assumed that the disease will remain active and that the prognosis warrants more active interference. Pneumothorax is then attempted. If after a sufficient number of trials it is found not possible to enter the pleural space, or that only a pocket is formed, then pneumothorax must be abandoned.

These preliminary steps have been carried out in each of the cases reported.

While this operation must be limited to those whose disease is predominantly one-sided, it is not necessary that the better lung should show an absolutely clear film. In these last resort cases the removal of the greater source of toxemia and fever in one lung gives the patient a chance to cope with the disease in the better lung. The fear that increased respiratory movement in the better lung would lead to activation of the disease has not proved to be well founded. As a matter of fact all of these patients had the respiratory function practically limited to one lung before operation was considered. The cases to be reported were patients who were inevitably approaching death from tuberculosis. It is a great satisfaction to find a surgical means of completely reversing this hopeless prognosis or of relieving distressing symptoms.

CASE REPORTS

Case 1—M. M., a Mexican woman, age 31 years, was admitted in June, 1925. She had been coughing for a year and a half, and had had two hemorrhages. Sputum was positive. During thirteen weeks following her admission to the hospital, while at rest in bed, she continued to have a temperature of from 101 to 104; her weight during this period remained stationary (Charts 1-3). Phrenicotomy on November 6, 1925, was followed by slight improvement in temperature and weight. Thoracoplasty was unavoidably delayed for ten weeks, during which time she gained eight pounds. Five days after the first stage her temperature was normal, and during the next thirty days until the second stage it went above normal once, and then only to 99. Following the second stage she rarely had fever until her discharge in September, 1925. At this

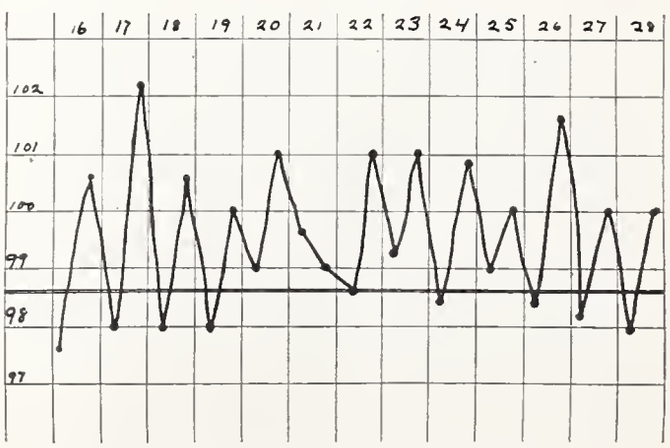

Chart 1—Showing the temperature range prior to operation in Case 1

* Read before the General Surgery Section of the California Medical Association at the Fifty-Sixth Annual Session, April 25-28, 1927.

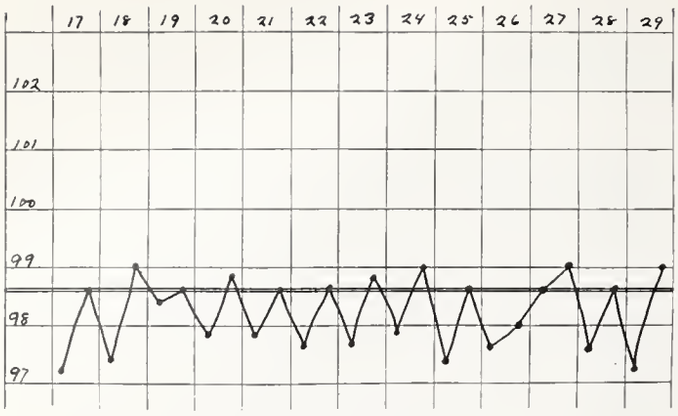

Chart 2—Showing the temperature range in Case 1 one year later

time she had gained forty-one pounds in weight, had no cough, her sputum was negative, and she had the appearance of a well woman.

One point is of especial interest. At the time of her admission the right or better lung was not free from lesions, as shown by x-ray and physical examination. With the reduction of temperature and improvement in nutrition, there was a marked improvement in the right lung, so that the x-ray report, one month before her discharge, reads, "Right lung field clear."

Case 2—F. B., male, Mexican, age 53 years, entered the hospital in January, 1926, in a very weak and emaciated condition, with high fever. As he was unable to stand, we do not know his weight at that time. The left lung was completely consolidated, with cavitation, but the right lung remained comparatively normal. Phrenicotomy produced no change in the diaphragm nor in his general condition. Thoracoplasty in two stages was performed on March 19 and April 16, 1926. Two ribs showed considerable tuberculous necrosis, but this did not interfere with primary healing of the wound.

There was immediate improvement in his temperature curve and general condition. When able to stand on the scales, five weeks after the operation, he lacked only nine pounds of equaling his previous maximum of 141 pounds. At the time of his discharge in October, 1926, he weighed 159, or eighteen pounds more than his previous maximum. He had very little cough, no sputum, appeared perfectly well, and there was no evidence of disease in the right lung.

Case 3—M. S., an American woman, age 23 years, had been coughing and losing weight for five years, following a pneumonia. There was irregular fever to 101. Tubercle bacilli were present. Even with absolute rest in bed she continued to lose until her weight reached ninety-four pounds. At the time of admission there was only a small lesion in the left

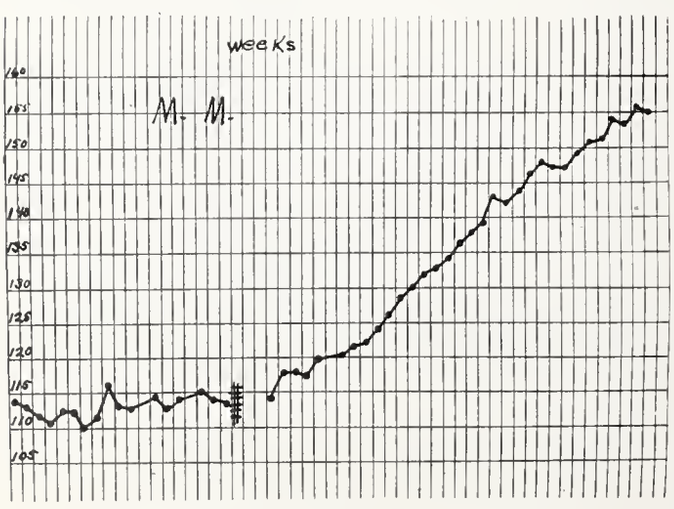

Chart 3—Showing weight range in Case 1

apex, but it advanced with great rapidity until the whole lung was consolidated. Although this was not the type of case for which surgery would ordinarily be considered, we felt that interference was warranted, for if the other lung became involved the progress there would be equally rapid, and the outlook hopeless.

In this case both pneumothorax and phrenicotomy failed because there was no retraction of the consolidated lung. Two-stage thoracoplasty was done on March 12 and April 9, 1926. Her weight then increased, but not so markedly as in the other cases. There was, however, a decided improvement in her appearance and general condition. When discharged in September, 1926, there was no cough, and no sputum could be obtained. She had gained ten pounds. Four months after her discharge she was running a practically normal temperature, and her pulse ranged from 72 to 80.

One year after her discharge she continues to have a normal temperature and pulse, and there is no evidence of disease in the right lung although there has been no further gain in weight.

Case 4—L. N., American, male, age 24 years, was admitted in June, 1925. During the fifteen months from his admission to the date of operation he had continuous hectic fever reaching 101, 102, or 103, with a chill almost every morning. Many bacilli were present. While there was bilateral involvement, the right lung seemed rather to improve as the disease advanced in the left, so that at the time of opera-

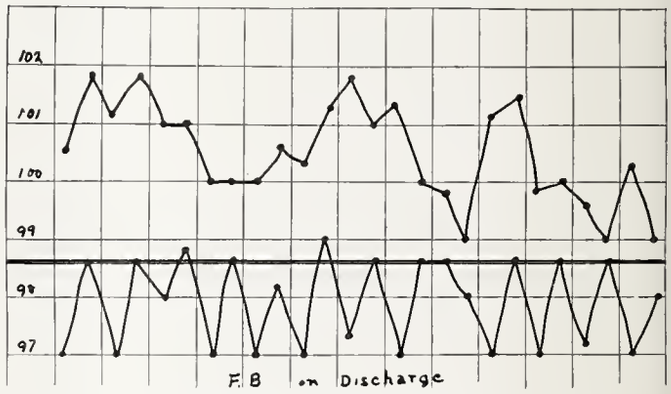

Chart 4—Showing temperature range in Case 2, on admission and on discharge

tion there was a great difference in the condition of the two lungs. But it was not a unilateral case, and the operation was distinctly a last resort. Thoracoplasty was done in two stages on September 21 and October 19, 1926. Following the operation the temperature rose to 103, but was normal on the fourth day, and during the next two months was above normal on only a few occasions, the highest point being 99.2 His general condition is markedly improved, though there is still some cough and expectoration. While with continuous bed rest this patient had lost twenty-eight pounds, following thoracoplasty, he regained six pounds in the first four weeks. Six months after operation he had a normal temperature and pulse and has continued to gain in weight. Although this operation was distinctly a last resort, the result up to this time has been very satisfactory and, we feel, has amply justified the undertaking.

One year after operation this patient continues to have a normal temperature and pulse, weighs more than his previous maximum, and the x-ray shows gradual improvement in the better lung.

Case 5—Mrs. C, American, was admitted in July, 1925. There was far-advanced disease of the left lung, with extensive cavitation. During a year and a half, under complete rest, the disease remained active. Thoracoplasty was done in December, 1926 and January, 1927. It is too soon to make any report as to the result of operation, but her progress to date

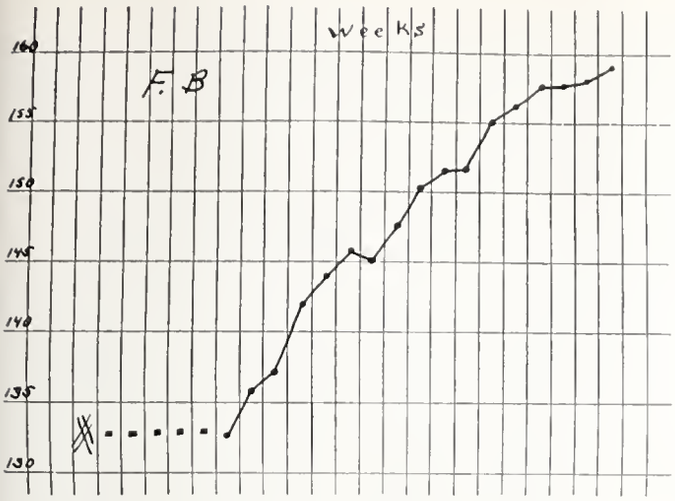

Chart 5—Showing the weight range in Case 2

has been very satisfactory, and the fact that she has, over so long a period, shown such marked resistance to any advance of the tuberculous process in the right lung leads us to hope that the final result may be satisfactory.

Nine months after operation this patient has only occasional slight fever, has begun to gain in weight, and there is distinct improvement in her appearance.

Case 6—L. W., American, male, had had artificial pneumothorax on the left side two years before, with marked improvement. However, he had stopped treatment and allowed the lung to re-expand, and, as is usual, it was impossible to begin pneumothorax again. He had also a beginning laryngeal tuberculosis. As the result seemed hopeless without interference, thoracoplasty was done in two stages in April, 1927. There is a decided improvement in temperature and general appearance, but the final result cannot be predicted at this time.

Six months after operation the patient's condition is the same, or slightly worse, than before operation.

CONCLUSIONS

Pneumothorax is recognized as a very beneficial procedure in suitable cases. For the rather large percentage of such cases where it cannot be done, thoracoplasty offers a mean of accomplishing the same result.

While the above series of cases is small, the results were so uniformly good, and the pain and shock so negligible, that this operation would seem advisable in certain cases in which the disease is actively advancing, but has not yet reached a stage making this a last resort.

Operative and postoperative mortality have been nil. Shock and pain, during and following the operation have been slight.

Improvement in temperature, weight and general condition was very prompt, and this continued in the first three cases until they appeared well when discharged. The other three cases have been too recent to justify comment.

511 Rowell Building.

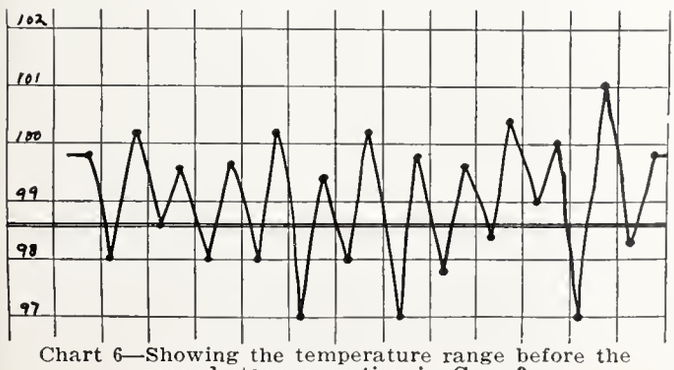

Chart 6—Showing the temperature range before the second-stage operation in Case 3

PART II

SURGICAL ASPECTS, BY JOHN H. PETTIS

One of the most noteworthy publications in the field of surgery in recent years is "The Surgery of Pulmonary Tuberculosis" by John Alexander. This volume came from the press in 1925, and is the first book on this subject in the English language. In the author's preface Alexander calls attention to the fact that "few physicians and surgeons are as yet aware that surgery is now curing or improving approximately two-thirds of those selected cases of far-advanced pulmonary tuberculosis that other methods of treatment have failed to benefit." Likewise, Hugh Cabot in the introduction states, "American surgeons have been notoriously backward in doing pioneer work in the surgery of pulmonary tuberculosis. For more than a generation operative surgery in this field has been developing, chiefly on the continent. Yet very little attention has been paid to it in this country." The chief aim of Alexander's volume is, therefore, "to acquaint the medical profession with the principles and practical details that will enable it each year to save thousands of lives which certainly will be lost if surgery is not undertaken."

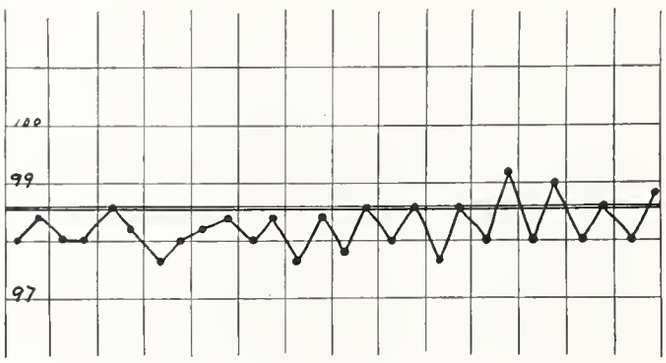

Chart 7—Showing the temperature range three weeks after the second-stage operation in Case 3

My interest was first attracted to this field of surgery in 1925, soon after the publication of Alexander's book. At that time the reported number of cases treated surgically during the preceding seven years in the United States was approximately three hundred. These three hundred cases had been operated by seventeen surgeons. At the present time authorities estimate that there are about thirty thousand persons in the United States with pulmonary tuberculosis who present suitable indications for surgical treatment and who will die of their tuberculosis if no operation is per-

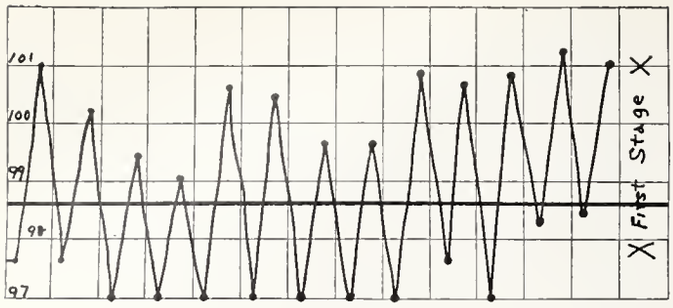

Chart 8—Showing the temperature range in Case 4 prior to operation

formed. Since the appearance of Alexander's work in 1925 the number of thoracoplasties has greatly increased. The operation is now being performed by a large number of surgeons in all parts of the United States. However, the reports of cases in the literature are relatively few, most of them coming from specialists in chest surgery working in the large clinics.

It is not the object of this paper to discuss the conditions that constitute suitable indications for surgical treatment, nor to outline the principles involved in selecting cases for operation. Doctor Ellsworth in Part I of this paper has dealt with this phase of the problem. There is general agreement that the task of discovering possible suitable cases belongs to the tuberculosis specialist, and that the final selection of cases for operation is the outgrowth of consultation between this specialist, the roentgenologist, and the surgeon. The technique of the operation has been splendidly described and illustrated by Alexander, Lilienthal, and others. My purpose in this paper on the surgery of pulmonary tuberculosis is to give some account of the experiences of a general surgeon who does not profess to be highly specialized in chest surgery.

TECHNIQUE USED IN PATIENTS OPERATED

My experience in the surgical treatment of pulmonary tuberculosis is limited to six patients, all from the tuberculosis ward at the General Hospital of Fresno County. These patients were selected as suitable for operation by Doctor Ellsworth, in consultation with the roentgenologist and myself.

Each patient was treated by a preliminary simple phrenicotomy and a two-stage extrapleural paravertebral thoracoplasty. The interval between the phrenicotomy and the first stage of the thoracoplasty varied from a few days to several weeks. The second stage of the thoracoplasty followed the first in from four to five weeks. In two cases the upper seven ribs were resected at the first operation and ribs eight to eleven inclusive resected at the second. In the other four patients, ribs six to eleven were resected first and the upper five ribs removed at the second stage.

The lengths of ribs resected was as follows: One to two centimeters from the first rib, five to six from the second, five to nine from the third, five to ten from the fourth, seven to ten from the fifth, eight to eleven from the sixth and seventh, ten to fourteen from the eighth, nine to twelve from the ninth and tenth, and eight to ten from the eleventh. It has been shown by Eloesser and others that quite as good lung compression results when shorter lengths of each rib are resected. This is especially true of the lower ribs. It is therefore probable that in this series a more radical removal of the rib cage has been done than is necessary or even advisable.

Whether or not simple phrenicotomy as a preliminary measure is of value is to my mind undetermined. Simple section of the nerve is a slight operation easily performed in a few minutes under local anesthesia. In three patients this simple procedure resulted in a marked ascent of the diaphragm; in the other three, there was only a slight elevation. This partial failure in three cases may have been due to dense adhesions between the diaphragm and the lung. Possibly a radical phrenicotomy might have given more uniform results.

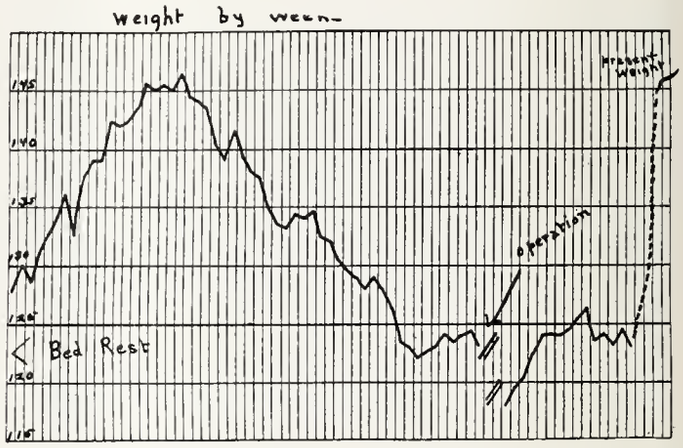

Chart 10—Showing the weight range in Case 4

The thoracoplasty was in each case performed under local anesthesia according to the technique described by Alexander. The solution used was one per cent novocain to one hundred cubic centimeters of which was added 1 cc. of 1 to 2600 suprarenin. None of the patients complained of pain during the operation, the only discomfort seeming to be the cramped position on the operating table. In no case was section of the intercostal nerve or its injection with alcohol resorted to. For the first twenty-four hours following the operation postoperative pain was such as to require moderate doses of morphin every four

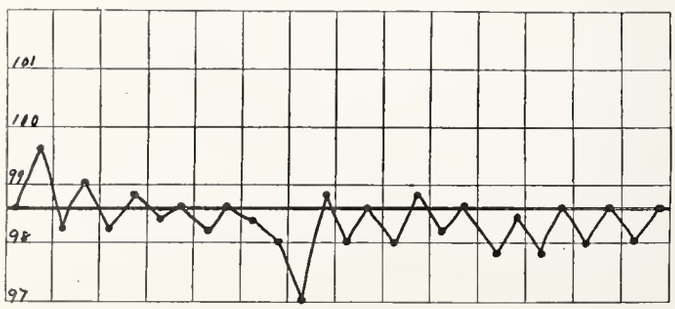

Chart 9—Showing the temperature range one week after second-stage operation in Case 4

hours, but after that interval there was no complaint. In no patient was there more than moderate shock following either stage of the thoracoplasty nor was there great cardiac embarrassment in any case, though all six patients were left-sided. There was slight wound infection in one patient.

COMMENT

Six patients are too few from which to make convincing deductions. However, it is interesting to note, first, that these desperately ill individuals were able to withstand these rather formidable procedures; second, that they all decidedly improved in that the cough disappeared or was alleviated, sputum decreased, temperature returned promptly to normal, and weight increased markedly in three patients, moderately in the other three. Three of the patients have left the hospital and have resumed some kind of work. Three patients are still in the hospital under observation. One patient is almost ready for discharge. The other two have shown marked clinical improvement, but have been operated too recently to justify any prognosis as to their final outcome.

What the late results will be in any of these patients cannot be foretold at this time. However, I feel that even though the results prove to be only temporary the surgical measures were amply justified.

CONCLUSIONS

From these limited experiences in this comparatively new field, may I offer for your consideration the following conclusions:

1. That the selection of cases suitable for surgical treatment should be the duty of the tuberculosis specialist, in consultation with the roentgenologist and the surgeon.

2. Many cases needing operation will be neglected unless general surgeons concern themselves with this problem.

3. The technical details of this operation can be mastered by a well-trained general surgeon.

910 Mattei Building.

DISCUSSION

Henry Hoit, M. D. (La Vina)—From a very limited experience in the practice of the principle of functional rest, surgically induced, in the treatment of pulmonary tuberculosis, I would regard the chief objection to artificial pneumothorax to be, not its restricted applicability, but its apparent unreliability. It does not accomplish the kind of relief which lasts in this most serious malady. It does not continue indefinitely the effects which are the most conducive to the welfare of the individual irrespective of his cooperation. It may produce at first, and very often it does produce, a change for the better which is quite remarkable, but too often the change is transient, due to the inconstancy of its action. For the sake of a result which is satisfying, it must be pursued faithfully over an extended period of time. In the presence of two common conditions—fibrous pleurisy and vomica—it is quite apt to fail.

Multiple costectomy, on the other hand, is much more reliable. It offers, at no great risk, not only more certain healing of the lung, but also protection of it against active disease for the rest of the life of the patient. As time passes, pneumothorax exerts a less dramatic and favorable influence, whereas thoracoplasty exerts a slowly accumulating and beneficial influence. Other things being equal and allowed for, multiple costectomy should not be postponed in advanced cases in the presence of fibrous pleurisy or cavitation. Both of these complications tend to affect the outcome adversely and the sooner surgical aid is extended to a patient so unfortunate the better the result is likely to be.

The point mentioned concerning the effect of interference upon the contralateral lung—that because it must do more work it will therefore become more susceptible to an active process—is a good one. To be influenced by this to withhold a surgical hand may mean failure to many a patient who might make good.

Multiple costectomy carried on conservatively is the operation of choice in the management of phthisis. In the event of recovery the reduction in the volume of the thorax so produced, if it is commensurate with the amount of lung tissue destroyed, leaves a space more nearly natural for the healthy lung to function in most advantageously. Furthermore, it may save the mediastinal structures—the heart, vessels, and tubes—from embarrassment due to the displacement occurring in the process of healing.

As we come to view the individual and his reaction to the infection rather than the apparent involvement of his lungs, I think that we will be influenced to practice the principle of functional rest by means of surgery instead of bed rest. We lack the courage of our convictions and are prone to regard too much the opinion of others as we study our patients and their needs.

❦

Leo Eloesser, M. D. (490 Post Street, San Francisco)—The patients of Doctors Ellsworth and Pettis were well chosen; all of them were ideal subjects for thoracoplasty, and their results are proportionately good. If there is any point with which I should be inclined to take issue with Doctor Ellsworth it would be his statement that "on account of the supposed dangers of the operation it has generally been regarded as a last resort." I think it still should be so regarded, for its dangers are not supposed, but very real; not the danger of immediate operative death—for that is slight—but the danger of setting one lung totally and permanently out of commission. That is something that one is very reluctant to do, as long as portions of the affected lung are sound; for should the remaining lung become actively tuberculous the patient is irrevocably lost, and this danger is very real. Until we know a good deal more about the postoperative mortality in thoracoplasty, not the immediate mortality but the mortality ten or more years after operation, I hesitate to advise it in early tuberculosis, and until all other means have been exhausted; although I agree that the operation is justifiable without prolonged attempt at conservative treatment in patients with large cavities or diffuse fibrous unilateral involvement. In the hope of saving some unaffected part of the lung I have recently operated upon a dozen patients by partial thoracoplasty. The results remain to be seen.

❦

Lewis D. Remington, M. D. (146 North Primrose Avenue, Monrovia)—We have often been told that tuberculosis is one of the most curable of diseases. Also that to secure the healing of the lung it is necessary that the stresses against which the body is struggling must, so far as possible, be removed.

Thoracoplasty is one of the ways by which, in some instances, this can be done. Physicians differ as to what they consider the suitable cases.

One says that it should be used only in extensive involvement of the left lung; where a large cavity or multiple cavities exist; where already the heart is embarrassed, as the support on the left side is weakened.

Another goes to the other extreme and says that thoracoplasty should be considered in every case in

which a cavity of the size of a hickory nut exists in either lung; where bed rest and intelligent care for six months have failed to bring about improvement; and where pneumothorax has been tried and has proved unsuccessful because of adhesions.

Whatever position we take we are beginning to realize its great value in the treatment of tuberculosis. Physicians are keeping the method in mind when studying the progress of their patients, rather than leaving it to be considered after all other means have failed.

PHLEBOLITHS*

By James R. Dillon, M. D.
and
Bernard A. Cody, M. D.
San Francisco

Discussion *by H. A. Rosenkranz, M. D., Los Angeles; Robert V. Day, M. D., Los Angeles; W. P. Willard, M. D., San Francisco; R. L. Rigdon, M. D., San Francisco.*

PHLEBOLITHS have been recognized by pathologists and anatomists for many years as realities, but not until the advent of the x-ray did they become of clinical interest. Rokitansky described phleboliths from an anatomic standpoint in 1856, as occurring most frequently in the periprostatic plexus in males and in the pampiniform plexus in females. The early investigators noted small round shadows in their roentgenograms of the pelvis which they could not satisfactorily explain, and the failure of surgeons always to find supposed ureteral stones led Tuffier in 1897, and Kolisher and Schmidt in 1901, to use a shadow-casting ureteral stilette for facilitating the diagnosis of ureteral and renal diseases. That phleboliths themselves cast shadows was not proven until 1908 by Clark and Orton, working independently. With the improved cystoscopic technique, the use of shadow-casting fluids to obtain pyelograms and ureterograms, and the use of the stereo, the diagnosis of them has become very accurate and rendered them important, especially to the roentgenologists and urologists. They are also of clinical importance to the surgeon and internist in that their shadows should indicate the necessity of a complete urological and cystoscopic examination if renal and ureteral disease is suggested.

RECENT LITERATURE

A recent report by Culligan in looking over 1555 consecutive roentgenograms of the pelvis at the Mayo Clinic, showed phleboliths in 38.99 per cent. The average age was 37.03 years, youngest 16: 59.2 per cent males and 40.8 per cent females. He stated they were found in the veins of the perivesical and periprostatic plexuses in males and in the perivesical and uterine plexuses in females, also occasionally in the veins of the spleen.

Culligan states a phlebolith grows from a central nucleus which arises in a thrombus. He also quoted Pulford that phleboliths occur in 2 per cent of hemangiomas, which could indicate that stasis can be a factor in their formation without infection. The relatively greater frequency of phleboliths in males gives infection a rôle, because of the frequent specific and nonspecific infection of the prostatic ducts supplying secondary infection to the adjacent plexus of dilated tortuous veins where stasis already exists, resulting in the formation of thrombi, which later calcify as a healing process. The absence of muscular support around these veins favors stasis and may help to produce thrombi. Thrombi in other parts of the body are probably better nourished and continue to exist as thrombi, while healing and calcification occur if the thrombi are undernourished. The chief factors in the formation of phleboliths are therefore lack of muscular support to the veins, stasis, undernourishment and healing by calcification.

Gynecologists have recognized for years the symptoms arising from varicose ovarian veins, and Clark in 1902 described relieving a woman of pelvic pain by cutting and ligating the ovarian veins, after tracing them into the pelvis and finding them enormously distended and containing five small phleboliths, lying encapsulated in the veins. He did not remove the phleboliths. In general, to date phleboliths have been treated as inert and symptomless incidentals. The frequent occurrence of patients complaining of pains in the lower abdomen, pelvis and hips, with no logical explanation of the symptoms, but with shadows of large and frequently multiple phleboliths in the region of the symptoms, caused us to doubt their innocence in all cases, and to start an investigation to determine the possibility of symptoms coming from them. The reports of various authors fairly definitely establish the fact that the presence of phleboliths indicates varicosities. If varicosities can cause pain in the legs and testicles, they can also cause it in the pelvis and abdomen, as has already been proven by the gynecologist.

ANALYSIS OF CASES

The data used in this paper were obtained from the x-ray files and the clinical histories of patients of the Stanford University Medical School. There were pelvic films of 900 patients, 286 or 31.7 per cent of whom showed phleboliths. Of this latter group 135 were private cases in which histories were not available and only an incomplete analysis could be made of the data given on the x-ray order slip. The other 151 cases came from the clinic where more or less complete histories were available. The average age was forty-nine and the youngest was twenty. Patients showing phleboliths *only* in their pelvic x-rays seemed to occur more frequently in the second and third decades. In the later decades there were more complications, particularly hypertrophic arthritis of the spine and genito-urinary disease in both male and female, to which the patients' complaints could be more likely attributed.

Of the 135 private cases which showed phleboliths, there were sixty-one sent in for x-ray of the pelvis, lumbar spines or sacro-iliac regions. Twenty-eight of these showed nothing in the x-rays but phleboliths, the other thirty-three showed in addition to the phleboliths, hypertrophic arthritis, old fractures of the pelvis and

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* From the Division of Urology, Stanford University Medical School.

* Read before the Urology Section of the California Medical Association at the Fifty-Sixth Annual Session, April 25-28, 1927.

femur, and possible ureteral stones. The other seventy-four cases were sent in for lower quadrant abdominal pains with requests for plain x-ray of the abdomen and urinary tract particularly, with forty pyelograms. Of this number, twenty-four showed phleboliths as the only x-ray finding, the others showing ureteral or kidney stones, hypertrophic arthritis or malignancy. This group of private cases was of no particular value to us, because of the impossibility of getting histories from the private doctors, but it is interesting to note the high incidence of phleboliths without other x-ray evidence of disease.

There were 151 cases having x-ray films showing phleboliths which had more or less complete histories in the Stanford out-patient clinics. An analysis of this group showed 59 per cent males and 41 per cent females. All but two of the entire number of female patients showing phleboliths gave a history of genito-urinary involvement, which included infections and pregnancies. There was a history of urinary tract involvement in 66 per cent, practically all of a nonspecific infection. In the female group there were very few histories giving gonorrhea as the infecting organism. The youngest woman was twenty-one, and the largest number of complaints were found in the second and third decades. In the male group 50 per cent admitted gonorrhea at some period in the history, and 26 per cent showed a present nonspecific infection of the urinary tract, mostly of chronic nature. The remaining 24 per cent of males did not show or admit urinary tract infection.

There were fifteen cases, twelve males and three females, that showed phleboliths in the x-ray pictures of their pelves as the only tangible clue to the cause of their complaints. The most common symptom was pain, as a rule, in the lower quadrants, sometimes radiating to the testicle on the side of the pain in the males. In seven of them the pains came in severe, acute attacks, simulating ureteral stone colic. Five out of this seven showed unilateral phleboliths on the side of the pain, while the other two showed phleboliths on both sides of the pelvis. Urological and cystoscopic examinations were negative. The urine in most of them showed an occasional pus cell, and one showed several blood cells. Practically all of them complained of some frequency and nocturia during attacks. Two had nausea and vomiting with the lower abdominal pain, but had negative gastro-intestinal and gall-bladder x-rays and negative laboratory studies as well as negative urological and cystoscopic examinations. Three patients were diagnosed and treated as neurotics after all clinical and laboratory examination proved negative, though each had phleboliths in the region of their complaints.

There were eight chronic cases whose pain had lasted from one to three years, most of the time as a dull pain in the pelvis with occasional attacks of a more acute nature, though two complained of pain more in the region of the hip. In six of the chronic cases the phleboliths were unilateral and on the same side as the symptoms, in the other two the symptoms were unilateral with bilateral phleboliths. Three of these had occasional attacks of urinary frequency, but showed only occasional pus cells.

There were several other cases showing phleboliths on the same side as their symptoms, but were not included in the above group, because other complications were present which could also account for their symptoms, though we feel that the phleboliths must have been responsible in some of them.

CONCLUSION

1. Phleboliths themselves may not cause symptoms, but their presence indicates a varicose condition of the pelvic venous plexuses.

2. As varicosities cause symptoms elsewhere in the body, it is reasonable to assume they can also in the pelvis and lower abdomen.

3. There are undoubtedly many cases of pelvic varicosities in which phleboliths have not developed, but which cause symptoms, either by stasis or acute thromboses, explaining many cases of obscure lower abdominal and pelvic pains in both men and women.

4. The fact that phleboliths were shown in fifteen cases to be on the same side and in the region of the symptoms, and also the only positive data obtained, convinced us that they represented some, if not all the responsibility for the symptoms.

5. The close proximity of the pelvic plexuses to the bladder and ureters explains the frequency of bladder and kidney symptoms with negative urological and cystoscopic findings.

6. As the chief factors in the formation of phleboliths are lack of muscular support to the vein, stasis, undernourishment, infection and calcification, treatment should be directed toward the correction of these factors by massage, hydro- and electrotherapy, and diathermy; and in women by the addition of pelvic and perineal surgery where indicated.

490 Post Street.

DISCUSSION

H. A. Rosenkranz, M. D. (1024 W. P. Story Building, Los Angeles)—Doctor Dillon's very instructive paper should make us mindful of the significance of varicose conditions, phleboliths or both, when seeking the diagnoses of obscure cases of pelvic or low back pain. The regularity of occurrence of phleboliths was first impressed upon me while dissecting in the Moabit Hospital in Berlin under Professor Benda some thirteen years ago. I was supplied with a new cadaver every day, and found in the periprostatic plexus phleboliths in nearly all cases. I also encountered calculi in the vesicles in this region. Urologists frequently meet with sand and small calculi while enucleating tumors of the prostate. I believe that they are the calcifications of infectious foci, since in these prostatic tumors small pinhead-sized abscesses are occasionally seen on section.

That phleboliths are more common in males is partly due, I believe, to the fact that the males, leading a more strenuous life, lifting, straining, etc., are more subject to thromboses.

Doctor Dillon's recommendation of physiotherapy in the amelioration of varicose conditions is most logical. Although it might be considered rather too speculative at the present time to operate primarily for phleboliths or varicose conditions, it would be well

for surgeons to bear this condition in mind when doing fixations, suspensions, etc., and to correct this pathology when found.

❊

Robert V. Day, M. D. (412 West Sixth Street, Los Angeles)—Doctor Dillon's important piece of research is unique. It seems that heretofore phleboliths had for us no significance except that with the unwary one might be mistaken for calculus. I trust that Doctors Dillon and Cody will continue their study.

❊

W. P. Willard, M. D. (380 Post Street, San Francisco)—This paper opens a line of thought upon a condition that occurs so frequently that we have paid no attention to it.

If phleboliths are an indication of varicosities and this condition is responsible for pain, then the hemorrhoidal plexus should cause pain frequently.

Here we have everything present. A near source for infection, stasis, and trauma, but, strange to say, very seldom pain.

I think it hardly fair to compare varicose conditions in the legs and scrotum to pelvic varicosities.

In analyzing the material presented a great deal is left to the imagination, certainly too much to warrant the drawing of any conclusions.

However, the condition offers something to refer to when we are unable to make a diagnosis.

❊

R. L. Rigdon, M. D. (909 Hyde Street, San Francisco)—Pain in the pelvic region is common in both male and female patients, and after we have made our most painstaking examination, and have assigned the cases to the recognized diagnostic groups, there still remains a considerable number that refuse to be classified.

Doctors Dillon and Cody have given us an additional grouping, and by that much have diminished the number of unassignable cases. This makes for confidence in the advice we give and cannot help but be a comfort both to patient and doctor. If time and a common experience prove their theory to be correct, we will have just reason for congratulating the authors.

THE LURE OF MEDICAL HISTORY*

CONTRIBUTIONS OF AMERICA TO SURGERY

PART II

Nineteenth Century

By Harold Mayo F. Behneman, M. D.
San Francisco

And now we come to the *founder of operative gynecology*, James Marion Sims (1813-1883) of South Carolina. His book, "The Story of My Life," will absorb your interest for an evening. It is full of not only his experiences, but of his thoughts and reflections upon the people and the times. His was a full career; he created a profound impression in the countries of the Old World, and lived a long and useful life. There are amusing and entertaining anecdotes I wish could be quoted here that you will find in his book. They give color to a life of work and high ambition. Among his outstanding contributions were the curing of vesicovaginal fistula (a condition previously irremediable), "Sim's" speculum, and "Sim's" position, and numerous appliances. In 1856 he devised the operation of colporrhaphy for relief of descensus uteri, cystocele, and rectocele. All were of incalculable benefit. He spent some time in Europe in later life, and in Germany he was held in high esteem. His "Clinical Notes on Uterine Surgery" (1866) was translated into German, as were numerous articles. Garrison describes him as one of the most gifted and original of American surgeons. Bryant Park in New York contains a statue erected to his memory.

Walter Burnham of Lowell, Massachusetts, in 1853 performed the *first hysterectomy* for uterine fibroids on record.

Edmund Randolph Peaslee (1814-1878) of Hanover, New Hampshire, was professor of anatomy and physiology at Dartmouth. He held the same position later in the New York Medical College, and while there in 1854 advocated and adopted the principle of drainage and intraperitoneal irrigation after ovariotomy, twenty years before Lister propagated his doctrine. In 1874 he was named professor of gynecology in Bellevue Hospital Medical College.

Isaac E. Taylor did an original operation for rectovaginal fistula in 1856.

The honor of *first using antisepsis in Chicago* goes to Edmund Andrews (1824-1904). One of his most notable labors was the study of the relative dangers attending the induction of anesthesia. He was one of the founders of the Chicago Medical College, the Michigan State Medical Society, *The Peninsular Journal of Medicine and Collective Sciences*, the Chicago Academy of Science, and Michigan University Museum.

Among the leaders in American surgery was Henry Jacob Bigelow (1816-1890) of Boston, Massachusetts, professor of surgery in Harvard Medical School and surgeon to the Massachusetts General Hospital for over forty years. Dr. Reginald Fitz said: "His lectures were models of condensed thought and applied knowledge," [13] "Doctor Bigelow made two contributions to the science and art of surgery which gave him lasting fame—the bloodless reduction of the hip-joint, and his methods of reducing dislocation." [6] "So great was his influence, it might almost be said that during his professional career he founded in New England a school of surgery." [13] He gave the first accurate description of the ileofemoral ligament of the hip-joint and its significance in the reduction of dislocations, in 1869. It should be remembered, however, that William W. Reid of Rochester, New York, had previously, in 1851 to 1855, shown in his classic papers many facts afterward more completely described by Bigelow. We owe much to Bigelow for his efforts to establish the administration of ether as a permanent part of operative technique. He also greatly advanced the technique of bladder surgery.

Tragically ended was the short life of Horace Wells (1818-1848) of Hartford, Connecticut, whose name is so intimately connected with the history of nitrous oxid anesthesia. He experimented with this drug in dentistry, but failed to establish its successful use. He died at the young age of thirty-three years by his own hand, de-

* This is the second of two papers on this subject. The first paper was printed in this journal in last month's issue.

Tablet to Crawford W. Long. First to use ether as an anesthetic in surgery, March 30, 1842.

spondent over his failure—a fatal case causing him previously to withdraw from practice.

Of a peculiarly inventive mind was John Thompsen Hodgen (1826-1882) of Kentucky, who devised the very useful and successful wire splints for fracture of the femur and forearm, which, by the way, were revived during the European war.

The *first to use adhesive plaster* in the treatment of fractures was Alexander MacWilliams.[11]

In a different field Samuel G. Morton (1799-1851) of Philadelphia commands our attention for his great collection of crania. Important contributions were his "Crania Americana" in 1839, and his "Crania Egyptiaca" in 1844. He summed up the knowledge of his time in "Illustrations of Consumption" in 1834.

Standing far above all others in this period was "The Nestor of American Surgery," Samuel D. Gross (1805-1884) of Easton, Pennsylvania. Holding honorary degrees from Edinburgh, Oxford, and Cambridge, he was the greatest American surgeon of his time. He gave the first account of the distribution of urinary calculus in 1851, the first systematic treatise on foreign bodies, and the first description of prostatorrhea in 1854. Among other accomplishments was that of writing, and the invention of instruments. In the former field we have, as a result, histories of American medicine and biographies, "A Century of American Medicine" (1876-1886) and the first systematic work ever published on pathology in 1839. He was the first to chronicle, analyze and compile the earlier contributions of America to medicine. Gross introduced deep stitches in wounds of the abdominal wall, performed laparotomy for rupture of the bladder, myotomy for wry-neck (1873), and first described and dissected a specimen of molar pregnancy. Garrison states, "Gross was a strong personality, a stalwart figure, with a benign countenance." His statue stands by the Army Medical Museum, in Washington.

Alonzo Clark (1807-1887) of New York, introduced the opium treatment of peritonitis in 1855. James P. White in 1856 demonstrated reduction and consequent curability of chronic inversion of the uterus by that means.

Erastus B. Wolcott (1804-1880) of Benton, New York, was the *first to excise the human kidney with perfect success*, which he did in 1861, before Gustav Simon.

The rather unusual feat of first successfully ligating the innominate, common carotid and right vertebral arteries in the same patient was accomplished in 1864 by Andrew Woods Smyth (1833) of New Orleans, the patient living for eleven years afterward. The autopsy specimen is at present in the Army Medical Museum.

Returning to the field of gynecology, we cannot pass by without mentioning Theodore Gaillard Thomas (1831-1903) of Edisto Island, S. C., who, like Marion Sims, practiced in New York. He was the *first to perform a vaginal ovariotomy* in 1870. In the year 1868 he published a treatise on diseases of women—an important contribution destined to be translated into five languages in ten years, Chinese being one of them. Also, in 1870, he revived Ritgen's operation of gastro-elytrotomy as a substitute for cesarian section.

Julius F. Minn in 1869 devised the operation of removing intraligamentary cysts by enucleation, which "gave woman an increase of years beyond the possibility of computation."[14]

Coming now to a student of Sims', namely, Thomas Addis Emmett (1828-1919) of Virginia, we find a new treatment of dysmenorrhea, of sterility, of lacerations of the cervix uteri, vaginal cystotomy and plastic surgery of the perineum. Kelly says: "He caught Sims' idea at once, acquired his methods and improved upon them, and did more to teach the members of the profession in this country how to do these operations than any other surgeon." He wrote an entertaining autobiography in 1905.

John Ball of Brooklyn first dilated the cervix uteri by divulsion.

A real pioneer of obstetrics and women's diseases was Charles D. Meigs (1792-1869), who first drew attention to the presence of cardiac thrombosis as a cause of sudden death in the puerperal state. In 1849 he published "Females and Their Diseases."

In the field of *abdominal surgery*, L. T. Boggs in 1867 first did a successful cholecystectomy, which greatly enlarged the scope of major surgery at that time.

Henry Orlando Marcy (1837) of Otis, Massachusetts, *introduced antiseptic ligatures* in the radical cure of hernia in 1878, using sterile kangaroo tendon.

Fourteen years later, in 1892, Robert Abbe (1851) of New York, *introduced catgut rings* in intestinal surgery.

Nicholas Senn (1844-1909) of Buchs, Switzerland, settled in the United States in 1852 and

became professor of surgery at Rush Medical College. He devised among other things a method of detecting intestinal perforation with hydrogen gas. 1888. "The merits of Senn as a surgeon were in calling particular attention to animal experimentation, to the importance of microscopical diagnosis and to the progress in surgical technique, particularly in intestinal and bone surgery." [15] He was the *first to use roentgen rays in leukemia.* He was a "highly trained scientific surgeon who made valuable experimental contributions to the study of the pancreas (1886), gunshot wounds, and intestinal anastomosis, in which he used decalcified bone plates," [10] He was the founder of the Association of Military Surgeons of the United States. He did much to improve first-aid work on the battlefield in the Spanish-American War.

His accomplishments were many and "even if some of them did not survive him very long, the name of Nicholas Senn will stand as one of the milestones and pillars in connection with the progress and high standards of American scientific medical works, particularly in surgery," [15] From 1905 to 1908 he was editor in chief of *Surgery, Gynecology, and Obstetrics.*

The title "Father of Orthopedic Surgery" in America has been given to Louis Albert Sayre (1820-1900) of New Jersey, who performed the second excision of the hip-joint in America (1855) and introduced the method of suspension in a plaster of Paris jacket for Pott's disease, in 1877. He was one of the first to advocate opening by incision of all suppurating joints. He also invented the flexible probe, a uvulatome, an improved tracheotomy tube, and other instruments.

As pioneers in railway surgery, one should not forget the accomplishments of Jackson of Kansas City and Outten of Saint Louis.

The *first nephrectomy for movable kidney* was done by Gilmore of Mobile, Alabama, in 1870.

The first man to advise interference with the Gasserian ganglion in severe trigeminal neuralgia was J. Ewing Mears (1838) of Philadelphia (1894).

That eminent physician and surgeon, Nathan Smith Davis (1817-1904) of Chicago organized many medical journals, among them the *Journal of the American Medical Association* of which he was the father. Davis was a pioneer in skin transplantation. Garrison says he was "perhaps the leading medical practitioner of that city in his day."

Famous in the annals of surgery and pediatrics is the name of Abraham Jacobi (1830-1919), once of Hartum, Westphalia, and later of New York. In 1874 he noted that congenital lipomata are finely lobulated and encapsulated. He was father of pediatrics in America, and the founder and editor of the *American Journal of Obstetrics* (1868-1871). In 1854 he made his own laryngoscope. He was one of the leading surgeons in this country.

To another "parent" of pediatrics in this country, we owe the method of intubation of the larynx in croup (1885-1888). That man was

JOHN SHAW BILLINGS
1908. Aet. 70

Joseph P. O'Dwyer (1841-1898) of Cleveland, *one of the greatest benefactors of infant life.*

The *leading American neurologist* of his time was S. Weir Mitchell (1830-1914) of Philadelphia, who was on duty as a volunteer medical officer at Turner's Lane Hospital, in 1861-1865.

Here, with G. R. Morehouse and W. W. Keen, he made the well-known studies on the effect of gunshot wounds on peripheral nerves, which were the basis of his later neurological work.

T. Bernard Sachs (1868-1916) described and did important work in cerebellar tumors.

In 1888 Wharton Sinkler isolated the great toe reflex and wrote upon its surgical and clinical aspects.

William Henry Welch (1850) of Connecticut and Johns Hopkins Medical School needs no more detailed account of his position as pathologist than would Osler in medicine.

Another shining teacher in pathology, probably the earliest in the West, was Christian Fenger (1840-1902) of Chicago. He was highly original in his work on brain abscess, cancer of the stomach, basal hernia of the brain and the ball-valve action of floating gall stones.

George Michael Edebohls (1853-1908) of New York introduced the operation of renal decapsulation in the treatment of chronic nephritis and puerperal eclampsia, 1901.

The first man to make a radiogram of the stomach and confirm surgically his findings, 1896, was John Conrad Hemmeter (1864). He was a

pioneer in duodenal intubation and a heavy contributor to experimental physiology.

William B. Coley (1862) of Westport, Connecticut, contributed in the radical cure of hernia and of malignant tumors.

A masterly clinical *teacher* and one possessed of high diagnostic skill, was Jacob Da Costa (1833-1900) of Philadelphia, who first described irritable heart in soldiers, 1862.

John Shaw Billings (1838-1913) was the first American surgeon to excise the ankle joint (1862) and wrote the *best history of surgery in the English language.*

Physiology is based upon experimental surgery, hence a few physiologists may justly be mentioned here. The most important single American contribution to *physiology* was that of William Beaumont (1785-1853) of Connecticut, a surgeon in the United States Army, through his observations on Alexis St. Martin and his gastric fistula.[16] In 1825, on the island of Mackinaw, Michigan, Beaumont began his studies on digestion, working on the half-breed just mentioned; he was the first to obtain gastric juice through a fistula from a living human being and to demonstrate beyond a doubt its chemical and digestive powers. "Most of the fifty-one conclusions or inferences which he summarizes at the end of his book are sound and correct today." [16]

Again, in *physiology,* we have the names of Austin Flint, Jr. (1836-1915), and his father, Austin Flint (1812-1886), the first of whom investigated the glycogenetic function of the liver. He also, in his early thirties, wrote his famous "Physiology of Man."

A contemporary of Flint, Jr., was Henry P. Bowditch (1840-1911) of Boston, who founded the first physiology laboratory in the United States. His work led in time to the idea of anesthetic blocking of the nerve trunks by Crile and Cushing. His most important piece of work was the demonstration of indefatigableness of nerve in 1890. Mention should be made here of Harvey Cushing (1869) of Harvard and his notable contributions to the surgery of the cranial contents, particularly of the pituitary gland. His great biography of Sir William Osler has deeply engraved his name upon the scroll of fame.

More famed as a literateur than as a medical man in American history, was Oliver Wendell Holmes (1809-1894) of Boston, Parkman professor of anatomy at Harvard Medical School (1847-1882). In 1843 he read his famous paper on "The Contagiousness of Puerperal Fever." "He broke the trail which was to lead to an era of safety." He also coined the words "anesthesia" and "anesthetic," and when asked which to call it, replied "ether." (There is another version of this incident.)

In miscellaneous fields we have Louis A. La Garde (1849-1920), who in 1892 and 1893 studied the effect of small caliber bullets upon the tissues of the body. *"He furnished the primary conception on which was based much of the surgery during the World War."* [17] He demonstrated that there is no such thing as a sterile gunshot wound, proving the heat of firing does not kill micro-organisms.

Kirk wrote some valuable articles on the amputation of extremities.

Surgeon Fauntleroy of the United States Navy performed in 1906 one hundred and forty-nine operations for elephantiasis, with one death. All others were complete successes.[18]

Jonathan Letterman (1824-1872) "devised and put in force the basic principles which are now employed by all armies in the field in the evacuation of the wounded." [17]

John B. Murphy (1857-1916) of Wisconsin, one of the greatest *surgeons* of his time, is remembered in our daily use of Murphy's button. A great aid to approximation with sutures, "in one of the most conservative German clinics, Czerny's, it had been applied over one hundred times in the few years following its invention." [6] Murphy also contributed on arthroplasty, bone grafts, intestinal anastomoses, and from 1908 until his death was editor-in-chief (the second) of *Surgery, Gynecology and Obstetrics.* He did much in blood vessel anastomosis, and in 1896 successfully united a femoral artery severed by a gunshot wound.

William J. Mayo wrote that "the greatest event in the history of American surgery was the formation in 1913 of the American College of Surgeons." [1] John B. Murphy was a pillar of strength in its foundation.

Turning again to *orthopedic surgery,* the name of Robert Lovett of Boston must be enrolled as a "leading spirit of the school of teaching the application of well-thought-out principles in orthopedic surgery." [1] He was one of a group of remarkable New England orthopedists, the other two being Edward H. Bradford and James W. Sever. The latter introduced the treatment of scoliosis by plaster.

It is obvious that *anatomy* bears a close relation to surgery. The first anatomical dissector in America was, without doubt, Thomas Cadwallader (1708-1779) of Philadelphia. A pupil of Cheselden, he started teaching anatomy in the above city in 1730, and was founder (1731) and director (1731-1739) of the Philadelphia library. His account of autopsy of a case of lead poisoning ranks, according to Garrison, as one of the classic accounts of lead poisoning of the seventeenth century.

Thomas Wood, surgeon, gave the first printed announcement of anatomy in America on January 27, 1752. What an historical event!

The earliest American treatise on anatomy was written by Caspar Wistar (1760-1818) of Philadelphia, and entitled "System of Anatomy" (1811-1814).[19] Soemerring praised his description of the ethmoid bone. His name is brought down through the years by the Wistar Institute of Anatomy and Biology in Philadelphia, and the wistaria vine.

Williams Edmunds Horner (1793-1853) of Virginia was professor of anatomy in the University of Pennsylvania in 1831. He discovered

the tensor tarsi muscle supplying the lacrimal apparatus, 1824. He performed and described important surgical operations, particularly on the eye, and published treatises on anatomy (1826) and pathology (1829). In 1834 he published an important paper showing that the rice-water discharges in Asiatic cholera contain epithelium stripped from the small intestine.

William Clay Wallace in 1835 showed the nature of the ciliary muscle.

Jeffries Wyman was the first to describe the bony spiculae in the neck of the human femur, and to contrast it with that in animals (1849).

The first American textbook on neurology was written by William A. Hammond (1828-1900), in 1871, who was Surgeon-General of the United States Army during 1862 to 1864.

Charles Sedgwick Minot (1852-1914) of Massachusetts contributed largely to human *embryology* (1892) and wrote a "Laboratory Textbook of Embryology" in 1903. He invented two different kinds of microtones and is widely known for his original work on the origin and structure of the placenta.

Edward Charles Spitska (1852-1914) made valuable contributions to our knowledge of anatomy, especially of the nervous system.

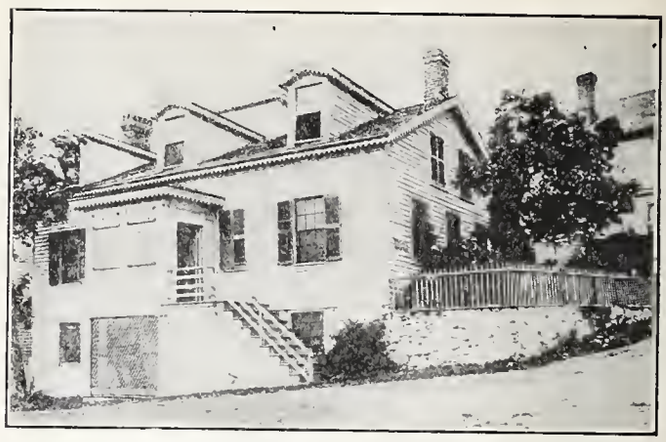
Last but not least, comes Franklin Paine Mall (1862-1917), professor of anatomy in the Johns Hopkins Medical School who, with Keibel, wrote a manual of human embryology, *"the best modern work of its kind."* [20] There is adequate and excellent evidence of his numerous contributions to anatomy and therefore to surgery.

Nearing the end of this long line of figures in American surgery there is the name—a famous one—of Reginald Heber Fitz (1843-1913), who *introduced the term appendicitis* and in 1886 admirably elucidated its pathology. Later, he gave us notable contributions on perforating inflammations of the appendix, of the pancreatic diseases and of intestinal obstruction.[6] He first described intrapleural lipoma of the mediastinum.

Another was Robert Battey (1828-1895) of Georgia, the first to perform ovariotomy for neurotic conditions, 1872. The operation has recently acquired a definite physiological significance in connection with modern work on the chemical correlation of the internal secretions.

A contemporary of Fitz, born two years later and dying in the same year as Fitz, was Charles McBurney (1845-1913) of Massachusetts who discovered tenderness at "McBurney's Point" as a sign for operative intervention in appendicitis, 1889. He was consultant to President McKinley, made improvements in operative technique, and was a *pioneer in aseptic surgery as well as a great teacher.*

An expert in the art of healing was William F. Halsted (1852-1913) of New York, professor of surgery at Johns Hopkins. He discovered conduction anesthesia (blocking the nerves) in 1885, devised the supraclavicular operation for cancer of the breast (1889) as well as the modern operation for hernia. He also introduced guttapercha in drainage (1880), rubber gloves (1890),



The home in the basement of which Alexis St. Martin was wounded. It was the American Fur Company's store at Michelimackinac, Mackinac, June 6, 1822.

and contributed by his researches on the parathyroid glands. Garrison states: "Halsted has taught the delicate art of the perfect healing of wounds, which has been nowhere more beautifully demonstrated than at his clinics." He also left us valuable statistics on metastases, etc., in cancer of the breast.

George Ryerson Fowler (1848-1906) first performed thoracoplasty in 1893.

Frank Hartley (1856-1913) was the originator of intracranial neurectomy of the second and third division of the fifth nerve for trigeminal neuralgia in 1892.

One of the most successful and useful materials used in intestinal surgery is the Connell suture, devised by F. Gregory Connell, now of Oshkosh, Wisconsin.

Howard Atwood Kelly (1858) of Philadelphia, pioneer and recognized leader in operative *gynecology* in this country invented the Kelly pad, new rectal and vesical specula, and wrote texts of world-wide fame and value. He also invented the Cumol process of sterilizing catgut, and numerous other procedures and instruments.

Another bright star in the *surgical* heavens is William Williams Keen (1837) of Philadelphia. He has done a great deal for linear craniotomy (1891), and was one of the first to perform interilio-abdominalis (1904). He has contributed much in the field of general surgery of the brain, of the spinal cord and nerves. He also invented new methods for sterilization of catgut, and at the age of ninety is still an active and able contributor to medical literature.

The laity of America and other parts of the world, as well as the medical profession, are familiar with the Mayo brothers. Their unusual ability as surgeons, organizers and contributors to medicine has made their name world-famous.

James Leonard Corning (1855) of New York City, in 1855 was the first to block the spinal cord with cocain anesthesia.

The first clinic in America solely for women was established by Gunning S. Bedford.

A reliable treatise on the subject of extrauterine gestation was published by John S. Parry in 1876.

Gilman Kimball (1804-1892) of Sewell, Massachusetts, was the first, according to Koe-

BERLE of Strassburg, to publish a case of vaginal extirpation of the uterus for fibroids, done with deliberate intent and successfully performed upon a correctly established diagnosis. We are also indebted to him for valuable contributions on gastrotomy and ovariotomy.

Thus ends this brief exposition of American surgical accomplishments up to the twentieth century. It will be noticed that only a few of our great surgeons and anatomists of today have been mentioned, the writer being restrained by his lack of personal knowledge of the many brilliant men whose professional careers are yet unfinished and whose names have not yet passed into history.

"The development of human thought and achievement, as a whole, has not been, as commonly supposed, a continual upward progression, nor even the equivalent of a continuous series of ascertained results. Thoughts and inventions, which seemed on the verge of practical fruition, have often been reduced to nothingness, even at the most decisive moment, through some combination of untoward circumstances; yes, even the very memory of a pathway broken into the Land of Promise is often obliterated and what seemed accomplished fact has had to be recreated by laborious work covering years, decades, and even centuries. Just the simplest, most natural and, in the end, almost self-evident facts are the hardest to evolve and elucidate; just what was most decisive and potent of result has been time and again overlooked by the seeker after truth. . . . The gold of historic thought, indeed, is as little to be found in the street as the gold of actual daily strife, and it is by no means the task of the historian of broad general scope to give the initial clew to its discovery. He indeed can only reproduce the past with fidelity and exactitude. The intuition of the true investigator and pathfinder of today and tomorrow must find its own way to new guiding principles from the work of yesterday, before yesterday, and the distant past." So wrote Karl Sudhoff.

Dr. John J. Abel once said: "Greater even than the greatest discovery is to keep open the way to future discoveries."

It is with these thoughts in mind that I have presented this material to you.

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CLINICAL NOTES, CASE REPORTS AND NEW INSTRUMENTS

TUBERCLE OF THE CHOROID IN MILIARY TUBERCULOSIS *

CASE REPORT

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AND
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OBSERVERS differ greatly as to the frequency of tubercles of the choroid in miliary tuberculosis. Marple [1] stated that tubercles are to be seen in every case of tuberculous meningitis. Tooke [2] reported seventy-three patients with tuberculous meningitis, seven of whom had choroid tubercles. Moore [3] examined thirty-three patients suffering from miliary tuberculosis, all but two of whom had tuberculous meningitis, and found that ten had one or more tubercles in one or both eyes.

The following is the first case of tubercle of the choroid in miliary tuberculosis observed on the Stanford University eye service:

CASE REPORT

History—J. P., colored girl, age 4 years and 11 months, was first seen at the Stanford University Hospital on June 29, 1927. For the last six months she had been losing weight; loss of appetite, six months; cough, two months; fever in the afternoon, two weeks. The weight loss had been marked, the weight at the time of admission was thirty pounds, which was eighteen pounds less than the patient weighed at the beginning of her illness. The family history obtained was negative, as was also the history of the patient previous to this illness.

Examination—The patient was moderately emaciated. The temperature was 39.8 degrees C.; pulse, 134; respiration, 22. The tonsils were large, reddened, cryptic, with pus exuding from the left. Examination of the chest showed impaired percussion note at the right base, and at the angle of the left scapula. There were fine inspiratory râles at the right base posteriorly, and moderately fine râles at the angle of the left scapula; all of which were increased after coughing. The abdomen was distended, tender, and had a doughy feel; fluid wave was elicited.

The backgrounds instead of showing the large number of brilliant light reflexes over their surfaces and

* From the Divisions of Ophthalmology and Pediatrics, Stanford University Medical School.

along the vessels usually seen in colored people, due to the excess of pigment in the retinal epithelium and choroid, were highly colored with a uniform red color and looked more like those seen in brunettes; compared with the peripheries they were edematous and hyperemic. The discs were normal. On the right fundus (Fig. 1) were seen four round, pale yellow spots, their margins fading into the surrounding retina, and varying in size from a quarter to a third disc diameter; the smallest one contained pigment. The left fundus contained a solitary tubercle, almost a disc in diameter, at 3 o'clock and one disc diameter from the margin of the disc. The tubercles did not appear to be elevated.

The roentgen ray report was as follows: "The lung fields are filled with coarsely granular density, apparently quite as heavy in the lower lobes as in the upper. In addition to this there are some round areas of density from half to one centimeter in diameter, rather faintly distinguishable at the lung roots and extending down into the lower lobes in some degree. The heart is at the upper limit of normal size, or possibly slightly enlarged. The spleen is much enlarged. Conclusion: Tuberculosis disseminated throughout both lungs, with enlargement of the bronchial glands. The enlarged spleen makes one suspect that the miliary tuberculosis is generalized."

The intracutaneous tuberculin test was positive with 1/10 mg. of K. O. T. The Wassermann reaction was negative. The blood showed: red blood cells, 4,300,000; hemoglobin, 70 per cent (Sahli); leukocytes, 13,200; polymorphonuclears, 76 per cent; lymphocytes, 22 per cent; large mononuclear, 1; eosinophil, 1. Catheterized urine showed a slight trace of albumin, and microscopically 15 to 20 leukocytes and 1 to 3 red blood cells per high-power field; smears showed no bacteria. A guinea-pig inoculated with the urine was killed four weeks later and smears made from the nodules of the spleen showed the presence of acid-fast bacilli. Cerebrospinal fluid examination showed: smears positive for *Bacillus tuberculosis*; Pandy + +; cells, 324; polymorphonuclears, 12 per cent; lymphocytes, 88 per cent; pellicle +; gold chlorid, 111111-2233; sugar, 0. As the child did not expectorate, no sputum was obtained for examination.

Course—The temperature varied from 38.8 to 40.0 degrees C. and the patient rapidly developed the typical signs of meningitis with rapid wasting. The eyes showed very little change; the discs seemed paler; there was no increase in the number of the tubercles, nor was there any elevation of them noted. The tubercles increased slightly in size. The patient was transferred to the San Francisco Hospital, University of California service, and died twenty-three days after she was first seen. No autopsy was obtained.

Clinical Diagnosis—Tuberculosis, miliary, with involvement of choroids, lungs, meninges, spleen, peritoneum, kidneys.

COMMENT

Miliary tubercles of the choroid are found with or without tuberculous meningitis. The average age of Moore's thirty-three patients was six years. The tubercles may be present in one or both eyes; there may be one or a larger number. Moore stated that he had seen forty-seven discrete tubercles in one eye, and Parsons [4] reported that as many as sixty to seventy have been found. In the case presented four tubercles were found in the right eye and one in the left. The tubercles may develop very quickly, Marple stating that he saw a tubercle develop in four hours. Repeated examinations with the ophthalmoscope are necessary. Tooke saw one case where after repeated and separate examinations by members of the attending staff, a solitary tubercle was first observed three hours before death. They are most frequently found a short time before death. Of the seventy-three cases reported by Tooke, where tubercles were found, in every instance they appeared not earlier than three days before death. The longest time before death a tubercle was seen was reported by Moore as thirty-two days. In the present case the tubercles were seen twenty-three days before death. Tubercles of the choroid vary in size from pin-point specks to one or two millimeters in diameter.

Fig. 1—Tubercles of the choroid of the right eye.

The finding of tubercles of the choroid affords most important diagnostic evidence of tuberculosis in cases of meningitis of unknown origin or in cases of obscure general diseases.

SUMMARY

1. A case of a colored girl, age 4 years and 11 months, is presented with generalized tuberculosis, with a history of loss of weight for six months and fever in the afternoon for two weeks previous to admission to the hospital.

2. Physical examination and a roentgenogram showed evidence of a generalized miliary tuberculosis.

3. Four discrete tubercles of the choroid were found in the right eye and one in the left.

4. The patient developed typical signs of meningitis and died twenty-three days after admission to the hospital.

ADDITIONAL CASE REPORT

Since reporting this case we have seen another patient with tubercles of the choroid.

K. Y., Japanese boy, age 5 years and 10 months, was seen November 17, 1927, with a history that two weeks previously he had developed a cold. He had moderate fever and a slight cough in the morning, also night sweats. His condition gradually became worse and he complained of frontal headaches. A week later he became irrational. Examination showed the child to be irrational but not stuporous. The left tympanic membrane was markedly congested. There were no definite findings in the lungs. The neck was definitely stiff and there was a double Kernig's sign. The roentgen ray report was as follows: "On account

of the patient's illness he was not fluoroscoped. The lung fields show very finely granular density of considerable intensity throughout. The heart is not remarkable. Conclusion: Disseminated tuberculosis throughout both lungs."

Ten days later the patient was very restless and apparently delirious. The neck was very stiff and the Kernig's sign was strongly positive. The heart sounds were somewhat faint and the patient was apparently failing. The backgrounds showed two tubercles of the choroid in the right eye and a solitary tubercle in the left. The tubercles in their appearance resembled those of the first patient. Urinalysis showed a faint trace of albumin. The blood showed: leukocytes, 8700; polymorphonuclears, 82 per cent; lymphocytes, 16 per cent; transitionals, 2 per cent.

The patient died seven days later. No autopsy was obtained.

The clinical diagnosis was tuberculosis, miliary, with involvement of choroids, lungs, meninges.

490 Post Street.

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UNUSUAL REACTION FROM GOLD AND SODIUM THIOSULPHATE INJECTION IN TREATMENT OF LUPUS ERYTHEMATOSUS

By HARRY E. ALDERSON, M. D.
AND
STUART C. WAY, M. D.
San Francisco

A RECENT experience in the skin clinic of Stanford University Medical School may throw light on some of the effects of gold preparations when injected intravenously. We have been using this preparation in the treatment of lupus erythematosus for several years. While we have had a number of severe reactions, including the appearance of edematous and erythema multiform-like lesions, this is the first instance in several hundred injections in which we have observed the development of frank purpuric lesion.

Our patient, a girl of fifteen, had typical lupus erythematosus involving the "flush area" of the face, of nine months' duration. The disease was in the active state and spreading rapidly. There was nothing of significance in the physical condition or the history of our young patient, who was well nourished and apparently healthy, with the exception of the "butterfly lesions" on her face.

The patient was given intravenously by Dr. Estaban Reyes three injections of gold and sodium thiosulphate at five-day intervals. After the second injection there was noticeable improvement in the appearance of the process. There were no reactions of any kind until after the fourth dose when a pale transitory erythema of the arms and neck was noted. A fifth injection was then given. Within twenty-four hours a severe reaction in the form of pyrexia (101), angina and generalized erythema of the entire body with accentuation of the lupus erythematosus lesions. An intravenous injection of sodium thiosulphate (0.5 gm.) was then administered. The tourniquet was applied, not very tightly, around the arm just above the elbow. Within a few seconds a typical profuse purpura developed involving the entire skin from the tourniquet to the finger tips. The numerous purpuric lesions were from 2 to 4 mm. in diameter. There were no other symptoms. The purpura disappeared in about two weeks. The lupus erythematosus subsided completely, leaving only some pigmentation in its place.

The schedule and dosage of injections was as follows:

No. 1: 0.05 gold and sodium thiosulphate.
No. 2 (five days later): 0.1 gold and sodium thiosulphate.
No. 3 (six days interval): 0.15 gold and sodium thiosulphate.
No. 4 (four days interval): 0.2 gold and sodium thiosulphate.
No. 5 (three days interval): 0.25 gold and sodium thiosulphate.

In this case there is reason to believe that the gold increased the permeability of the small vessels and affected the vasomotor mechanism so that the increased pressure, lowered vessel tonicity and increased permeability produced the purpura.

490 Post Street.

Number of Licensed Midwives Decreases—The number of midwives licensed to practice in New York State has decreased from 375 on January 1, 1927 to 320 on the first day of the present year.

There were twelve new licenses issued during 1927, making a total for the year of 387. Six were refused licenses for 1928, three had their licenses held up for further investigation, forty-three gave up their licenses or failed to renew because of ill health, advanced age or other causes, fourteen moved out of the state or disappeared, and seven died. Five new licenses have been issued for the present year and two midwives, former holders of licenses who did not practice during 1927 have been granted licenses for 1928.

According to the monthly reports of midwives, there were 5758 births attended by them during the past year as compared with 6974 in 1926 and 7788 in 1925. The 1927 figure will undoubtedly be increased somewhat as late reports are received, but it indicates a steady decline year by year in the total number of births reported by these women.

There were five deaths of mothers, eight deaths of babies, one case of ophthalmia neonatorum, and three cases of puerperal septicemia reported by midwives. One midwife attended 133 births and four attended 100 or more cases each.

Two of the three cases of septicemia occurred in the practice of one midwife. Both patients were delivered on the same day and developed symptoms within twenty-four hours. Prompt treatment at the hospital, with blood transfusions, saved the lives of the two women. The midwife's license was suspended for three months and she was instructed to provide a new bag and equipment before resuming her practice. Before the end of her suspension period she was accused of having induced an abortion. The patient died, but the coroner had obtained an antemortem statement incriminating the midwife, who was subsequently indicted by the grand jury. She was released under bond and is still awaiting trial.

In January 1927 a former licensed midwife was brought before the grand jury and indicted for practicing midwifery without a license. She pleaded guilty and was fined $150 and a suspended sentence of one year in jail was imposed.—*Health News.*

BEDSIDE MEDICINE FOR BEDSIDE DOCTORS

An open forum for brief discussions of the workaday problems of the bedside doctor. Suggestions for subjects for discussion invited.

GLUCOSE REACTIONS AND THEIR PREVENTION

Alice F. Maxwell, San Francisco—The value of intravenous glucose solutions as a therapeutic measure has long been accepted and the method has been employed for a wide variety of conditions. In medicine the usefulness of glucose in acute infectious diseases, pneumonia, etc., cannot be overemphasized; the application of this treatment in surgery has demonstrated that nothing relieves postoperative shock, vomiting, and acidosis as promptly as glucose. Indeed many surgeons advise its use routinely as a preliminary and prophylactic measure in all major operative procedures. In the obstetrical field intravenous sugar has been most effective in controlling the acute vomiting and intoxication of pregnancy. In short the value of this procedure as a supportive measure in any medical or surgical crisis cannot be disputed.

Unfortunately, however, unexpected and unfavorable reactions occasionally follow its use, which may lead to most serious consequences and even fatal termination. It is generally agreed that these reactions are entirely preventable and depend upon errors in technique in preparation or administration of the solution. A discussion, therefore, of such reactions and their prevention should be of considerable interest to the medical person.

A glucose reaction is usually ushered in by a sharp chill followed by a sudden and often high elevation of temperature; later shock and mild or severe collapse may occur. Cyanosis and prolonged dyspnea have been noted. Autopsy examinations of several patients dying after intravenous glucose showed a thick sticky substance adhering to the heart valves. Impure commercial glucose from a tin can container was used generally in these cases to make the solution. Severe reactions following the use of commercial glucose are frequent. Improper preparation of the distilled water used as a solvent for the sugar, faulty sterilization of the solution, caramelization, rapidity of injection, temperature and concentration of the solution, the method of cleansing the apparatus for administering the sugar, are factors which are most important and must be scrupulously observed if reactions are to be avoided.

The following are a few general rules which should be followed in the preparation and administration of glucose solution.

Solvent—The glucose must be dissolved in freshly doubly distilled uncontaminated water. Salt solution or sodium bicarbonate solutions are not satisfactory. The distilled water should be used the day of distillation or sterilized immediately after distillation and kept sterile. If the distilled water is not immediately sterilized and kept sterile, a pyrogen resulting from bacterial growth will develop. This pyrogen is apparently a nitrogenous bacterial product which is not destroyed by sterilization and will cause a sharp reaction (chills and fever) if used. Distilled water of uncertain age and bottling should never be used.

Glucose—Chemically pure anhydrous glucose is necessary for intravenous therapy and is manufactured by several different firms. The importance of "chemical purity" on the label cannot be overemphasized, and preparations labeled "pure glucose" should not be used as a substitute.

Dosage—The average dose for an adult is one gram per kilogram body weight, and the appearance of sugar in the urine after 50 or 75 grams of dextrose simply represents the kidney spill and is not of great importance. A 25 per cent solution is a very satisfactory concentration, as its use is followed by more rapid and pronounced effects. The hypertonicity favors a more prompt interchange between the blood stream and tissues and therefore quicker utilization by the body. If larger amounts of water are required a 10 per cent solution may be used with safety; lower dilutions, however, are inadvisable, for many unfavorable results have occurred from the overloading of the vascular system with large amounts of a weak glucose solution.

The glucose should be carefully weighed into clean glass flasks and dissolved in the freshly distilled water. The solution should be filtered at least five times to remove all dust or foreign particles, the flasks plugged with cotton stoppers, sealed and sterilized by steam (one hour daily at 100 degrees C. for three days) or if in haste by an autoclave (thirty pounds pressure for one-half hour). The solution can be kept indefinitely provided it has been properly sealed. Solutions showing sedimentation or caramelization must be discarded.

The rubber tubing and glass connections needed to carry the solution to the vein should be carefully cleaned and sterilized. New tubing requires special treatment and before using must be thoroughly washed with running water boiled and finally autoclaved. The following suggestions come from the Sloane Hospital for Women, New York City: New rubber tubing should be soaked in soap and water for one hour; soaked for six hours in 4 per cent solution of sodium hydroxid, washed in running water followed by distilled water, and finally sterilized by autoclave.

The temperature of the solution is most important. A solution below 37 degrees C. or above

45 degrees C. will almost invariably result in a reaction. The rate of injection must be carefully calculated—it is essential that the solution be given slowly, one and one-half to two hours are required to inject 100 grams of glucose. This can be repeated every four to six hours without glycosuria.

Hospitals which are using a large amount of glucose intravenously for economic reasons usually prepare their own solutions. Ampoules of glucose carefully prepared are available and most useful. They are usually prepared as a 50 per cent solution and should be diluted only with freshly doubly distilled sterile water. If this is not available it is better to administer the solution without dilution.

To guarantee satisfactory results from intravenous glucose therapy these few rules must be carefully observed.

* * *

Emile Holman, San Francisco—Doctor Maxwell's paper ably presents the important precautions to be used in preventing reactions following the use of glucose solutions intravenously. Attention should be called also to the work of Lahman and Moore, *Archives of Surgery,* March, 1927, who have shown that the normal ultramicroscopic emulsion of fat in the blood plasma may by various chemical and physical agents be broken "down," or the emulsion "coarsened" so that droplets of fat of a size capable of producing embolism are set free in the blood stream. They utter the warning that the physical state of the blood fat should receive consideration in every instance in which medicaments are introduced into the blood stream. A 10 per cent glucose solution was found to be one of the chemical agents capable of effecting such a coarsening of the emulsified fat. They counsel, therefore, that intravenous glucose should be administered when the plasma fat content is minimal—not immediately after a meal, nor it is conceivable, not immediately after an ether anesthesia which has the effect itself of breaking down the normal fat emulsion.

It would appear also that a 25 per cent solution might be more effective in breaking down an emulsion than a 10 per cent solution, and from other points of view it seems desirable to use a less concentrated solution. A 6 per cent glucose solution is isotonic with the blood, but there seems to be no harm in employing a 10 per cent solution of dextrose in an 0.7 per cent salt solution which is a better balanced solution from the point of view of ionization of the blood.

Doctor Maxwell does not mention the use of buffer solutions in preparing the glucose. Perhaps it is just as well that she does not do so. At one time much was expected from the use of phosphates to maintain the p_h of these solutions, but even with their use, reactions sometimes occur and it is probable that the very strict regard for the precautions Doctor Maxwell outlines will do more toward eliminating these reactions than the use of buffer solutions. Stoddard, however, in an article in the *Boston Medical and Surgical Journal* for December 11, 1924, states that since the use of 10 cc. of a sodium phosphate solution for each liter of glucose solution no reactions from intravenous glucose have occurred. He considers it most important to use such a buffer solution even though its action may be entirely empirical.

* * *

Andrew Stewart Lobingier, Los Angeles—This timely paper by Doctor Maxwell should receive the widest notice. The precautions laid down by Doctor Maxwell with such meticulous exactitude are of the utmost value. They are not usually observed, we venture to think, and the precision with which these measures should be conducted may find a slow acceptance by men who are fond of intravenous therapy but are unwilling to take the care which chemical conditions in the blood stream may demand.

Doctor Holman's suggestions following the work of Lahman and Moore on the emulsion of fat in the blood plasma is of the highest importance. In the days when chloroform anesthesia was more common, fatty change, especially in the cells of the liver, was the usual sequence of this anesthetic and in many instances was the probable cause of chloroform fatalities. As has been shown, prolonged ether anesthesia may be followed similarly by large fat globules in the blood stream, and the imminence of fat embolism may be a very serious menace. The suggestion that the fat content in the blood current should be known before glucose is given intravenously, is a wise precaution.

We have for a number of years used soda and glucose by proctoclysis to correct the acetone and diacetic acid which is often found present when the patient enters the hospital, and is usually present after anesthesia. Most patients are also dehydrated when we see them as subjects for surgery. It has been our practice for many years to prepare the patient for days before the operation by raising the fluid content and fortifying the patient against acetone and its evil consequences. As a result, vomiting, thirst, and other postoperative discomforts have been minimized and in most cases prevented entirely.

* * *

Mott H. Arnold, San Diego—For some time it has been our practice to put the patients on an intensive diet of glucose, per mouth, prior to operative procedures, and I think we have gotten beneficial results, preventing acidosis, nausea, vomiting, and many uncomfortable conditions which often follow surgery.

Postoperatively we have had practically no bad effects or reactions following glucose intravenously. This no doubt is due to the fact that we have been particularly careful in the glucose that we have used. We have always used a chemically pure anhydrous glucose and prepared it with carefully distilled water, or with normal saline solution. With this we have always used a buffer solution. Our choice is a 5 per cent glucose solution, 500 to 750 cc. freshly prepared, sterilized in the autoclave, given at intervals of six hours and at least an hour or more to administer the solution. In our head cases we have used a 50 per cent solution, using from 50 to 100 cc., and have had no bad results.

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EDITORIALS

THE FIFTY-SEVENTH SESSION OF THE C. M. A.

Like many other great events, the 1928 Sacramento meeting of the California Medical Association is now numbered with things which belong to the past. This fifty-seventh annual session of the California Medical Association was a distinct success. The California profession is indebted to the Sacramento Society for Medical Improvement (for Sacramento has the honor of being the pioneer county medical society of our state, and as such has been permitted to retain its name of years ago), and to the efficient local committees whose members did so much to make the general and scientific meetings and the social outings and diversions so pleasant for all who were present.

Some comments on items of special importance may be of interest.

* * *

President Percy Todd Phillips of Santa Cruz laid down the gavel of office, and is now a member of the group of past presidents. He may take pride in the record of an efficient administration.

President-Elect William H. Kiger of Los Angeles assumed the duties of president. He asks for and is assured of the full coöperation of the members of the Association throughout the state. Under his presidency the California Medical Association will continue its onward progress.

Dr. Morton R. Gibbons of San Francisco was elected president-elect. Doctor Gibbons has long been associated with organized medicine in California, and in him this honor goes to one who in service in his profession is most worthy of such high recognition. Doctor Gibbons has the unique distinction of not only coming from a family of doctors, but of possessing a grandfather and a father who as physicians were closely identified with the organization and development of the California Medical Association in the days gone by. His grandfather, Henry Gibbons, was president of the California Medical Association in 1857 and again after its reorganization in 1872. His great uncle, William P. Gibbons, was president of the California Medical Association in 1886, and his father, Henry Gibbons Jr., was president of our state association in 1897. That he may and will emulate and be worthy of the high concepts of service of his forbears is the hope and belief of his many colleague friends.

* * *

The House of Delegates voted to postpone action on the revision of the Constitution and By-Laws until the 1929 session, which will be held next spring at San Diego. The two drafts prepared by the special committee and the general counsel of the Association were presented as proposed amendments and will be studied during the coming year by the component county societies and members. Action on these and any additional proposed amendments will then come before the House of Delegates at the 1929 meeting in Coronado.

* * *

The proposed changes in the Medical Practice Act of California were discussed at a Council meeting with a representative of the Governor's office, and assurance was given that in the new proposed state Department of Professional Standards, which the next legislature will be called upon to create, every effort will be made by the state administration to fully protect, in full spirit and harmony with the best traditions of our past experience in matters of medical licensure, the standards laid down in the present state Medical Practice Act.

* * *

The proposal to change the time of the annual session of the California Medical Association from April or May to September or October was suggested and seriously discussed by the sections and the House of Delegates. The sections seemed to favor a fall session, but the members of the House of Delegates voted in favor of a continuance of the spring sessions. There are good pros and cons for either time, and the change can always be tried in the future in case a change of procedure should seem desirable.

* * *

In some thirty states of the Union, women's auxiliaries of the state medical associations are in operation. These women's auxiliaries are intended primarily to enlist and be under the control of the women members of physicians' families. The object of such state and county women's auxiliaries is to maintain a contact and interest in certain phases of the work of the state medical association and its component county societies. The details of organization of these women's auxiliaries are still to be formulated. Due notice will be given the component county societies in regard thereto.

* * *

Members who attended the Sacramento session carried away memories of interesting and profit-

able meetings and of pleasant social and fraternal contacts. Those members who were so unfortunate as not to be able to attend should make plans for next year's San Diego meeting, when the headquarters will be at the old Hotel Del Coronado, itself the scene and alive with memories of more than one historic session of the California Medical Association.

The King is dead, long live the King! Sacramento for the moment is of the past, let us all look forward to 1929 at San Diego! Lay the foundation of your plans to that end, now.

MENS SANA IN CORPORE SANO

"A sound mind in a sound body." This thought, enunciated by the Romans centuries ago has been often quoted in many lands, but in America in recent years, has become considerably more than an abstract dictum—has in fact become very much the basis of a plan for daily living by almost countless thousands of fellow humans.

The many factors having to do with bringing this thought into such practical expression are intimately interwoven with our newer modern civilization and need not be here discussed. It should be gratifying to physicians to know that such are the facts; and that even though as practitioners of the healing art, so much of their daily work has to do with the alleviation and cure of disease and injury, the principle of cultivating a sound body in order to create a better place for a sound mind, is only another way of approaching the whole subject of disease prevention.

* * *

The medical profession may take just pride in the knowledge that the modern-day more effective methods of preventing disease not only largely rest on the researches and discoveries of medical men, but that the leadership in the propaganda to apply such newly discovered facts for the benefit of the world at large, in most instances has likewise been in the hands of the members of the medical profession. It logically follows that this leadership should continue to remain under the guidance of physician citizens since their special education and training gives them an unusually good perspective and intimate knowledge of the many problems of disease prevention and health conservation.

* * *

If there be merit in the contention, other things being equal, that a sound mind has a better chance of being developed when associated with a sound body, then it follows that the supervision of the development of that sound body should be started not in the adult but in the child-age period. Or. to put it otherwise, the supervision of both mind and body development, so far as public interests are concerned, should be systematically taken up, one with the other, when the child enters the primary grades of our public schools, and at least be kept up until the pupil leaves the school environments.

* * *

That thought brings us to a consideration of the public school system of the United States, which is such an inherent and powerful element in the development of our American civilization.

In the Declaration of Independence in Congress July 4, 1776, the unanimous declaration of the thirteen United States of America, it is stated: "We hold these truths to be self-evident: that all men are created equal; that they are endowed by their Creator with certain inalienable rights; that among these are life, liberty and the pursuit of happiness. . . ."

In the above principles, as expounded by the signers of the Declaration of Independence, the thought is very definitely brought out that in our land it shall be an inalienable right to be endowed with life—and that means a life of health if possible, and that there shall be for each of us an inalienable right to seek happiness—and that implies at its best, a sound mind in a sound body.

* * *

In all the states of the Union, public school education from primary grades to university halls is provided, because of the accepted belief by American citizens that the trained mind should enable the possessor to become a better and more useful citizen. It is fortunate that this widespread belief in the advantages of broad education is so generally held; even though to the regret of nonsectarian physicians and many of the laity, the exponents of cultist methods of practice so often seem to place such little value thereon when they establish and exploit their so-called systems of healing.

* * *

In our public school systems the outstanding recent phenomenon in American collegiate and university life has been the extraordinary development of the state universities, this unusual growth being more marked in the middle and far west than in other portions of the Union.

Another interesting feature that has become evident in recent years has been the new visualization of schoolhouse environment and construction, as applied to schools of primary, intermediate and high-school types. It requires no stretch of imagination for most of us, and especially those of us who grew up in eastern and middle west cities of larger size, to remember how almost sordid and drab were some of the schoolhouses, school environments and school rooms which we knew. Contrast now the memory of such school structure pictures with the modern-day schoolhouses which everywhere meet our eyes in these Pacific Slope states, both in urban and rural communities, and the change is certainly startling.

Is it to be wondered at, that under the influence of these superior school-housing environments, more and more of the youth are of themselves urging parents that they be permitted to carry on their schooling into college and university halls?

Of course there be those who would decry this tendency of modern-day American youth, but in the long run, since education makes for a broader perspective of life, and a greater possibility of at least personal happiness, it may be left to time and experience to work out the remedies for any deficiencies which may exist in this hegira of the

modern American youth into our higher institutions of learning. These young people who matriculate in our colleges should certainly be able to derive greater benefit in mind development, if they enter the institutions with sound bodies.

* * *

These preliminary comments bring us to the special subject which it was planned should be here discussed—the health and corrective physical education departments of some of the California school districts.

In recent issues of this journal have appeared several articles by Rodin, Lokrantz and Clark, in which the authors discussed some phases of these health and corrective physical education problems as they were being met and solved in the San Francisco, Los Angeles and Pasadena school districts.

It may be of interest in this connection to call special attention to a recent report of the Los Angeles Department of Health and Corrective Physical Education of which Sven Lokrantz, M. D., is director; since it will show how, in one of our metropolitan centers, that school activity has taken on such stupendous growth that its scope and methods are being scrutinized and studied by the school departments of many of the larger cities of our country.

* * *

First as regards the general scope of the work in this department of the Los Angeles school district:

It is stated that "the purposes of physical education in the schools are to aid the teachers in solving the problems of the backward child, to aid the physical training instructors in adjusting gymnastic activities and in assigning the children to the corrective physical education rooms, and to aid the parents in discovering conditions of which they have no knowledge and which may have a bearing upon the general health and efficiency of the child."

In order to carry on the physical examinations necessary to discover such basic physical defects, the work of the Los Angeles health and corrective physical education department has been grouped under the following divisions:

Eye Deficiencies	Speech Defects	Defective Hearing
Decayed Teeth	Lung Diseases	Orthopedic Defects
Heart Diseases	Nervous Disorders	Postural Defects
Poor Nutrition	Diseases of Nose and Throat	

The personnel needed to do this work in the Los Angeles school district, in which over 330,000 children are under supervision, requires the services of more than three hundred skilled persons.

* * *

It would be of interest to take up certain phases of the work in further detail, but in this column it would lead us too far afield. Some concluding comments, however, may be made.

The question may be put: Do not these activities cost a very large amount of the taxpayers' money? The answer is of course: Yes. However, it must be remembered that the end justifies the means, and that a state can spend none of its money to better advantage than when it wisely uses its funds to promote the development of sound bodies and sound minds in its children, since these children are tomorrow the protectors and useful citizens of the nation, and for those functions they need both sound bodies and sound minds.

Another possible question has a more intimate relation to the medical profession: "Are not such activities an expression of state medicine, and will they not work for a destruction of the scientific initiative and progress that is so closely identified with individual or personal health, as contrasted to public health, practice? Here our answer would be: No. For the evils of so-called state medicine are those associated, not with the prevention of disease or the conservation of health, but those which would debauch the standards of personal practice in relation to the diagnosis and treatment of diseases and injuries.

* * *

Organized medicine as that term is understood by practitioners of nonsectarian medicine, does not stand primarily for a perpetuation of vested material interests of physicians; but does stand primarily for the protection and perpetuation of high and efficient standards of professional education, training and practice, and for the material rights that are necessary to attain those ends, in order that a better and larger service may be given by the profession for lay fellow citizens, in both public health and personal practice work.

* * *

To our mind this corrective and physical education of our schools is worthy of the closest coöperation on the part of skilled medical men and women. In Los Angeles it is gratifying to know that the salaried medical personnel have, in addition, some fourteen advisory groups, each under a chairman, and each group holding regular sessions. Each of these advisory groups is composed of well-known physicians who volunteer their services to aid in this altruistic work. Problems of procedure and policy are constantly referred by the chiefs of divisions to such advisory boards. In this wise the entire work is kept on an impersonal basis, and all taint of commercialism or personal aggrandizement avoided.

From the writer's own experience as a chairman of one of the advisory groups, his observation of the working of the Health and Corrective Physical Education Department of the Los Angeles school district leads him to believe that it not only does not make for state medicine, but that it will be a big factor in teaching the rising generations of citizens to have a keen discriminatory sense in choosing skilled medical men and women for themselves and their friends, when future occasions may require for them, the services of physicians.

It behooves all component county medical societies of California and of the adjacent and other states to be interested in this physical education work of the schools of their respective counties, and to maintain those contacts which will make for the best possible end-results for all concerned.

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I. KEY TO ABBREVIATIONS

Add.—Address.
Or.—Original Article.
C. R.—Case Report.
B. M.—Bedside Medicine.
Ed.—Editorial.
M. T.—Medicine Today.

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MEDICINE TODAY

Current comment on medical progress, discussion of selected topics from recent books or periodic literature, by contributing members.

Tropical Medicine

Tropical Medicine in California—At first thought the subject of tropical diseases in California seems far-fetched. A little reflection shows it to be very pertinent. Tropical climate is compounded of low altitude, high temperature, high humidity, high insolation, and high uniformity. All of these elements we have in varying degree in California.

We have potential disease vectors, as ticks, flies, mosquitoes, fleas, etc., ready to serve whenever the appropriate infections are present. We have endemic reservoirs of malaria; plague; intestinal protozoa; flat, round and leaflike worms; smallpox; tularemia; typhoid; and other typical tropical diseases. We have a constant filtering in of non-endemic tropical diseases such as sprue, yaws, beriberi, leishmaniasis, leprosy, scurvy, and various mycoses. We have direct communication by ships, freight, crews, and passengers, with all parts of the tropical world, especially Central and South America, the Pacific islands and Asia.

We have special problems of tropical medicine arising from (1) our neighbors to the southward; (2) production, preservation and safe importation of tropical perishable food supplies; (3) marine medical services; (4) harbor engineering and architecture, with reference to tropical shipping; (5) requirements of immigration and quarantine inspections; (6) and, finally, individual diagnosis and cure of this class of diseases.

Innumerable problems of tropical climatology, health preservation and pathology are awaiting solution. All of these are important for the development of California commerce and shipping. Many of them are important in our domestic affairs here in the state.

Soldiers and sailors, and missionaries, are constantly going and coming, bringing tropical diseases for diagnosis, treatment and arrest of spread. Medical men themselves bring in new strains of tropical malaria and other parasites after study travels. Returning tourists and trippers add amazingly to the collection, often because they have not been properly instructed in personal health preservation. Business men and their families, students, and foreign travelers make a contribution. While tropical medicine cannot be separated narrowly into a class by itself, it nevertheless does introduce new problems and methods, and a type of disease somewhat different from the usual type of temperate climates. And the amount of medical practice properly coming under this head in California is increasing rapidly, aside from the fact that much is here already, simply awaiting recognition.

There is a particular need in California for a first-class institute of tropical medicine and hygiene. Its service to commerce and shipping would be valuable. It would be a clearing house for the diagnosis and treatment of these diseases, for research, and a center for education of physicians, nurses, and laymen. It would be a state-wide enterprise focusing the best talent of the medical profession and scientists on these lines. Organized for community support, it would repay its capital many times over in service to commerce, public and individual health, lay and medical education, international relations, and solid advertising value based on service to California.

ALFRED C. REED, San Francisco.

Proctology

Houston's Valves, and Their Rôle as a Factor in Obstipation—Houston's valves are usually three in number, arranged spirally in the rectum. The first is situated at the upper border of the ampulla; the second about one-half to one inch above, while the third is usually located just below the rectosigmoid junction.

They[1] are composed of mucous membrane, connective tissue, muscle fibers, blood vessels, and nerves; project almost at a right angle into the rectal lumen, and normally occupy about one-quarter of the diameter of the rectum.

Their[2] function is to prevent the sudden deposit of the emptying sigmoid into the ampulla of the rectum.[3] Hypertrophy may occur as a congenital defect, and also as the result of long-continued voluntary retention, ulceration, chronic colitis, and other affections of the lower bowel.

This condition is found most often in the first valve, sometimes in the second, frequently in both, but rarely in the third. The ordinary interpretation of hypertrophy, a thickened valve, is rarely found, for the usual form seen is the wide, rigid valve, occupying one-third or one-half of the lumen.[4] This rigid projection prevents the feces from reaching the anal outlet. Under such circumstances lumps of fecal matter can be seen resting on the upper or concave surfaces of the valves, or the upper rectum is completely packed with fecal material, it being possible to find this latter condition after an apparently normal defecation.

If the premise is accepted that following a normal evacuation the entire six inches of the rectum should be empty, then hypertrophy of one or more

of the Houston valves will be the responsible factor in obstipation of the incomplete evacuation type. Delay and difficulty in expelling enemata is peculiarly symptomatic of this condition, and dysuria and frequency are not infrequently observed. Rectal ulceration has been reported; and arthritic, neuritic and autointoxication symptoms can be due to absorption.

Diagnosis is made with the rectoscope or proctoscope, the patient being in the knee-chest position, or inverted on a Haynes' table. Gant states that obstinate obstipation of this type cannot be cured by bougies and massage, and contends that when the valves are markedly hypertrophied nothing short of their division will effect a cure. Gant and Pennington have devised metal clips for the division by pressure. Hirschman advocates their division by a rubber ligature, the necessary pressure being maintained by a perforated or split shot.

Martin first suggested valvotomy by division of the valve, suturing the incision transversely, and packing the rectum. Complete excision of the hypertrophied part of the valve, with suturing of the edges, omitting the rectal packing, more thoroughly relieves the obstruction, and makes convalescence shorter and easier. In some instances valvotomy is followed by an immediate cure, in others an atonic colon must be restored to normal before the cure is complete.

A. J. Murrieta, Los Angeles.

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Dermatology and Syphilology

Electrothermic Methods in the Treatment of Cutaneous Neoplasms—Electrothermic methods for removing benign and malignant new growths of the skin are becoming deservedly popular with dermatologists.

Benign growths such as papillomas, warts, small angiomas, and small moles can best be removed with electrodessication (fulguration) after cocaining the base. This method is also applicable to the very small superficial basal cell epitheliomas. Telangiectases can be removed with a very fine spark with results equally as good as when the electric needle is used.

When the growth is definitely malignant it is generally safer to employ surgical diathermy (bipolar electrocoagulation). This applies to squamous cell epitheliomas of the skin and lip. Also to basal cell epitheliomas (except the very small ones which can be removed by electrodesiccation). Wide coagulation of the highly malignant melanocarcinomas and melanosarcomas of the skin is preferable to surgery. The potentially malignant keratoses of radiologists can be removed with electrodesiccation with greater safety and surety than with radium. Among the rarer lesions which can be destroyed by electrocoagulation can be mentioned small patches of lupus vulgaris, tuberculosis cutis, and the malignant tumors of xeroderma pigmentosum.

The new modality, the high frequency knife or "radio knife" is of great value in dermatologic surgery. Skin incisions made with this knife are comparatively bloodless, all capillaries and small vessels being sealed by the spark. Large vessels must be coagulated or ligated. The sealing of the lymphatics reduces the chances of metastasis. Incisions made with this knife heal by first intention.

In brief, these three modalities are extremely valuable additions to the armamentarium of the dermatologic surgeon in the warfare against cutaneous malignancies. They rank with but do not displace other well established methods of procedure such as radium, x-ray, surgery, and cautery.

H. J. Templeton. Oakland.

Urology

The Relationship Between Urology, Ileus and Intestinal Obstruction—This relationship, while perhaps a bit strained, is yet close enough to warrant its brief consideration, for urology touches shoulders with intestinal obstruction in two ways—anatomically and physiologically.

Anatomically, when the direct mechanical cause of the obstruction is due to one of the urinary organs. The kidney is probably the most common offender in this class and hydronephrosis its most frequent pathologic variation. Young states that the mass may cause various gastro-intestinal symptoms, including complete intestinal obstruction. A movable kidney, especially one the seat of tumor, may act in the same way; as may other uncommon conditions. However, this class is chiefly of general surgical interest, for they are only occasionally recognized before operation, and only rarely amenable to urologic treatment even when so recognized.

The physiological group is the more interesting and important. Here the relationship is based upon the fact that in intestinal obstruction the kidney behaves much the same as it does in uremia.

This was clearly shown by McGuarrie and Whipple, in volume 29 of the *Journal of Experimental Medicine,* from which the following is quoted:

> Individuals with intestinal obstruction show a heaping up of all nonprotein nitrogenous substances in the blood. Urea is most conspicuous in this material. The kidney is evidently unable to secrete any of these nitrogenous substances with its normal facility. These substances are being formed with abnormal speed, so there is a great accumulation in the blood and tissue. The kidney in this condition reacts much like the kidney of chronic nephritis, although there is no anatomical injury and the kidney of intestinal obstruction is only temporarily insufficient. With relief of the obstruction and clinical recovery the kidney function

returns to normal. This injury can be repaired easily and leaves no trace behind, inasfar as modern histological methods can show.

These facts were experimentally demonstrated on dogs and are seen in any advanced obstruction.

Intestinal obstruction may therefore simulate uremia. In turn uremia may present intestinal obstruction as one of its major symptoms. French authors seem to have laid emphasis upon this type which they term gastro-intestinal uremia and which may present symptoms of constipation and diarrhea, often alternating, and even those of complete intestinal obstruction. This type of gastro-intestinal uremia is seen both in acute and chronic forms and may come on with explosive symptoms, particularly in connection with urinary stone or prostatism. Here lies the chief point of this paper, namely, that following what Hugh Young terms the obstructive uropathy or a mechanical blocking of the urinary tract, uremia gradually or suddenly may set in; and that this uremia may occasionally follow the gastro-intestinal form, giving a clinical picture of intestinal obstruction.

Young states, "That the complex of general systemic symptoms accompanying the obstructive uropathy cannot be distinguished by any laboratory or clinical procedure from that resulting from chronic nephritis" or symptoms "classed under the head of uremia." Hence the source of confusion when the unusual case appears where uremia of urologic origin causes or simulates intestinal obstruction. Here routine surgery might well be fatal; whereas the relief of the obstructive uropathy by treatment of its cause, such as stone or retention of urine would itself clear up the intestinal obstruction. Following prostatectomy it is not uncommon for varying degrees of ileus to appear which respond poorly to the ordinary treatment for this condition, but do well under the forced fluids and other treatment for renal decompensation. I think this is occasionally true in any kind of a case with low kidney function.

Urology does then bear a distinct relationship to ileus and intestinal obstruction, and keeping this relationship in mind may be of help in time of need.

E. J. Eytinge, Redlands.

Bacteriology and Parasitology

Intestinal Protozoa—With the advance in knowledge of the intestinal protozoa many questions have arisen regarding the most satisfactory methods of diagnosis. Until about 1920 most authors stated that it was necessary to observe the organisms in motion and under definite circumstances to make a correct diagnosis. During the last few years the fallacy of this idea has been demonstrated and the examination of the cold specimen has gained wide favor.

To determine the best methods now in use for securing a high efficiency in diagnosis with minimum effort I have recently mailed questionnaires to a number of protozoologists throughout California requesting information regarding: preparation of patient, number and type of stools, and the influence of substances commonly used that would affect the presence of the organism in the stool and thus interfere with the diagnosis.

These returns have indicated that it is the general opinion of California protozoologists that a series of six specimens, on successive days, should be examined before making a final negative diagnosis. In addition to this a warm specimen obtained from the patient in the laboratory before, or following, the series will increase the percentage of flagellate infestations detected and will occasionally demonstrate ameba in the active stage when not found in the routine specimens.

Some protozoologists prefer the administration of bile salts or "Biladine" tablets when obtaining the series, believing that this still further increases the percentage of positives.

The returned questionnaires would indicate that the aging of the stool and the use of preservatives increases the difficulty in making a satisfactory diagnosis. They agree that stools are not satisfactory for examination for a period of from three to four weeks following a barium meal and that there is a decrease in number of cysts and parasites following the use of a high milk diet.

My own personal experience seems to indicate that I have obtained a higher percentage of positives in individuals who have received no catharsis or medical attention of any kind before the examination. In a series of seventy apparently healthy students I obtained approximately 50 per cent of positives with a single stool examination. From the out-patient clinic of the White Memorial Hospital, the stools run about 20 per cent positive, while in the hospital less than 10 per cent appear to be infested. I have ascribed this to the custom of administering barium, cathartics and other medications, as a preliminary to hospitalization.

Briefly reviewing the information available I am convinced that with prompt examination of specimens, and avoiding those things detrimental to the parasitic protozoa, the best method of obtaining a high percentage of positives is by securing a series of six stool specimens without catharsis, other than a small amount of some form of bile salts. When parasites are not found in this series, a warm stool examination following saline catharsis is essential.

The cold stool examination usually consists of two stages:

1. A preliminary study to determine the presence or absence of parasites without attempting to determine type except in a general way. This usually consists of a study of the specimen, mixed with saline for the purpose of noting activity, and with fresh iodin-eosin mixture for determining the presence of the encysted forms.

2. A final study of the suspected specimens found in the preliminary examination. This consists of permanent mounts stained by the iron hematoxylin method, from which a final diagnosis of the type of parasite can be made.

H. E. Butka, Los Angeles.

Urology

Mechanism of the Secretion of the Urine—The attack on the problem of the mechanism of the secretion of urine recently has been quite actively renewed through the application of newer methods of micromanipulation in the study of the activity of some of the more primitive kidneys. These kidneys are so nearly like the mammalian kidney anatomically that the findings have been applied to the physiology of the human kidney. The frog, necturus and amblystoma, have been the lower forms that have been studied in particular, and it is possible with these amphibians to study under the microscope actual renal changes. Even rather extensive surgical procedures are possible by the perfection of mechanical stands and manipulators that fasten on the microscopic stage (Chambers). The one big point still in dispute is with reference to the function of the tubule and its different portions. Recalling the earlier theories of renal secretion, Bowman and Heidenhain postulated that water filtered through the glomerulus, but that the solid substances of the urine were added by the secretory activity of the tubular cells. Ludwig's theory was purely mechanical, attributing filtration to the glomerulus and a concentration of this fluid by diffusion in the tubule, whereas the so-called modern theory (Cushny) explains the mechanism of the formation of urine by mechanical filtration in the glomerulus and of vital reabsorption of threshold substances in the tubules. According to this theory, there is no active secretion of substances, although Cushny definitely states that the evidence so far leaves this probability unsettled.

One of the most used and important methods of study has been with dye stuffs, in fact Heidenhain's theory was built up on the results following intravital staining with sodium sulphindigotate, which so beautifully stained the cells of the convoluted tubules and no other portion as to clearly indicate that it was secreted by these cells, and the inference followed that other solid substances appeared in the urine similarly. But it was not long afterward that another dye stuff when used was found to stain the capsule as well as the cells of the convoluted tubules, and this difference in the behavior of sulphindigotate and carminate of sodium has led to a great deal of confusion. Zoölogists, largely on the findings in the use of these two dyes, have built up a theory of cellular specificity which is given a very prominent place in the study of comparative excretion. Burian calls cells which presumably secrete or excrete dye stuffs arthrocitin and classifies them into indigoarthrocitin and carminarthrocitin, an excretory function being implied in all cells which stain with either of these dyes and a marked difference in different cells being shown, some staining with one and not with the other. Even in the lower animals the two essentials of theories of excretion are evidenced, the vehicle or fluid menstruum coming definitely from one structure and the solids from another, and in the findings with these dye stuffs those structural portions which elaborate the fluid portion of the urine are never stained. Flame cells or solenocytes or nephrostomes of nephridia of annelids or lower worms show no affinity for these dye stuffs, but the tubular portions of these nephridia are deeply stained, some portions by one, some by the other dye.

More recent studies, however, seem to show that a cell stained with any dye is proof neither of secretion nor reabsorption and in the light of the modern theory it is interesting to interpret anew these earlier studies with these dye stuffs. Ever since Nussbaum's famous experiment on the frog this animal has been a popular one for laboratory workers and there is even a textbook in general use in which the anatomy of the frog is treated specially and in detail (Ecker). But the results are still somewhat confusing. Stieglitz, for instance, attacks Cushny's hypothesis by results obtained in the frog with iron. His histochemical studies lead him to believe that the convoluted tubule is a unit which is active in secreting iron and is not at all concerned in reabsorption, in fact he goes so far as to say that if there is any reabsorption of water even, there is no evidence from his studies that the convoluted tubules are involved but that more likely this reabsorption is performed by the loop of Henle.

In this connection Richards and his associates have contributed most valuable evidence by applying micromanipulative methods to the frog's kidney. By their technique a simultaneous collection of glomerular fluid and bladder urine in the frog can be made. Analyses of these two fluids show definitely that sugar and chlorids are present in the glomerular fluid but not in the bladder, which is taken to mean that these substances must be reabsorbed in the course of the passage of this glomerular fluid down the tubules. By watching the activity of the glomerulus under a high-power microscope, as well as by collecting the glomerular contents, they were able to demonstrate that dye stuffs are eliminated from the frog's circulation by way of the glomerulus. The interesting studies of Hayman confirm these findings so far as the glomerular fluid is concerned, all dyes being found here following intravenous injection, and the intravital staining appearance of the kidney that follows intravenous injection was exactly duplicated by Hayman by means of intracapsular injection by the method of Wearn and Richards, so that Hayman concludes that the presence of a dye in the cells of a tubule is no evidence one way or the other for secretion or reabsorption. Hirschfelder and Bieter also observed phthalein in the glomerular capsule, using Richard's method of micromanipulation.

To emphasize the confusion of laboratory results Edwards and Marshall, and Edwards independently, concluded after a microscopic study of the behavior of dyes in the frog and rat that the proximal convoluted tubules eliminate these dye stuffs by actual secretion. This conclusion is based not only on the fact that the dye is actually seen in the cells but mainly on the observation that the deep staining of proximal tubules with certain dyes during their maximum elimination in the urine disappears simultaneously with the dis-

appearance of the dye from the urine. The mesonephros of necturus has been studied in a similar way to that of the frog and some very interesting results obtained. Nephrostomes persist in one portion of this kidney and are absent from the tubules of another portion. The contents of the peritoneal cavity gains entrance to the tubules by way of these nephrostomes so that two routes of supplying substances to the renal tubule are possible, one by way of the circulation by way of the glomerulus and the other by way of the peritoneal cavity by way of the nephrostome. Dawson used iron salts as were used by Stieglitz in the frog and he found, irrespective of whether these iron salts reach the lumina of the tubules through nephrostomes from the body cavity or through the circulation, that they are absorbed by the epithelium of the distal convoluted portions, gaining entrance to the tubule in case of intravenous injection by elimination through the glomeruli. Dawson found no evidence whatever of any secretion of iron by the epithelium of any portion of the tubule with the exception, of course, of the capsule. White and Schmitt, by micromanipulative methods, have studied the site of reabsorption in the kidney tubule of necturus and have obtained capsular and tubular fluid separately for analysis. Their studies demonstrate that sugar and chlorids are reabsorbed in the proximal convoluted tubule. Edwards again confuses the issue by giving contrary results after similar studies with necturus. He injected certain dyes both intraperitoneally and intravenously. When these dyes get into the lumina of the renal tubule through nephrostomes he did not find that they were absorbed by the cells of any portion of the tubule, but when they reach the kidney through the blood stream the proximal tubules were definitely stained. He also states that these dyes disappear from the cells of tubules simultaneously and proportionately as they disappear from the urine, a conclusion exactly similar to that which he made from his studies on the frog's kidney. Should these studies of Edwards be confirmed, they will reopen a problem which other studies were about to solve satisfactorily.

Frank Hinman, San Francisco.

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General Medicine

Local Passive Transfer—It was shown as early as 1921 [1] that hypersensitiveness could be transferred from a sensitive individual to local skins areas in a nonsensitive individual. This demonstration did more to advance our knowledge of the mechanism of human hypersensitiveness than any other single development in modern immunology.

This actual transference of the sensitiveness of one patient to a nonsensitive patient is accomplished by injecting, intradermally, the blood serum of the sensitive patient in local areas of the skin of the nonsensitive patient. In these locally restricted areas, then, it is possible to obtain reactions similar to the reactions obtained in the skin of the sensitive patient. Therefore, this technique is a satisfactory indirect method of testing infants and bedridden asthma sufferers.[2]

By means of this technique it was demonstrated that in the blood serum of hypersensitive individuals there are specific reacting substances that are not present in the blood serum of nonsensitive individuals.[3] It has been further demonstrated that undigested proteins do pass the normal intestinal tract.[4] With this new method of study antigens have been specifically identified,[5] making the passive transfer technique the final conclusive method in identifying specificity of antigen.

By means of this technique we can look forward to further advances of greater practical importance. Studies are being made now, using local passive transfer technique, the results of which will be published when completed.

Edward Matzger, San Francisco.

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STATE MEDICAL ASSOCIATIONS

CALIFORNIA MEDICAL ASSOCIATION

WILLIAM H. KIGER.....President
MORTON R. GIBBONS.....President-Elect
EDWARD M. PALLETTE.....Vice-President
EMMA W. POPE.....Secretary

OFFICIAL NOTICES

Nineteen Hundred Twenty-Eight Annual Session—The fifty-seventh annual session of the California Medical Association held at Sacramento was the second largest meeting of the past four years.

The following shows the record of attendance for those years:

Year	*Place*	*Members*	*Guests*	*Total*
1925	Yosemite	450	350	800
1926	Oakland	750	350	1100
1927	Los Angeles	981	220	1201
1928	Sacramento	747	401	1148

When one considers that the resident membership of the Sacramento Society for Medical Improvement numbers but 120 members, this total registration of 1148 is the reflex of a most unusual interest on the part of the Association at large, aroused doubtless both by the worth of the scientific program and by the large and varied entertainment planned by the Arrangements Committee. Sacramento is known in the history of California medicine as the city where the Association was organized in 1856 and reorganized in 1870. It is traditional for its open-hearted hospitality—so much so that Dr. Gideon Wells suggested Sacramento must have been settled entirely by Southerners.

Those who attended the Sacramento session were warm in their praise of the meeting and the efforts of the Arrangements Committee and are even now planning not to miss the fifty-eighth session to be held at Hotel Del Coronado from May 6 to May 9 inclusive. General and section meetings will be at the hotel headquarters, and so combine scientific and social interests under one general roof. Reservations at Hotel Del Coronado should be made early. Dr. Mott Arnold, chairman of the Arrangements Committee, however, states there are ample hotel facilities in San Diego proper for any who are unable to secure reservations at Hotel Del Coronado.

* * *

The Directory of Organizations regularly listed in the index of each journal, will publish the names of section officers. Those members who wish to present papers at the fifty-eighth session should make application to section secretaries before 1929. The program is complete at the end of January of each year.

Officers 1928-1929—The following changes in officials of the California Medical Association became effective at the second meeting of the House of Delegates on May 2, 1928: Dr. William H. Kiger, Los Angeles, president; Dr. Morton R. Gibbons, San Francisco, president-elect; Dr. Edward M. Pallette, Los Angeles, vice-president.

Dr. T. Henshaw Kelly, San Francisco, vice-president for the preceding year was elected councilor-at-large to fill the vacancy caused by the election of Doctor Gibbons as president-elect. The Council otherwise remained the same.

Delegates and Alternates to the A. M. A. were re-elected to succeed themselves.

The Program Committee for 1928 is as follows: Emma W. Pope (chairman), J. Marion Read, Lemuel P. Adams, Robert V. Day, and Karl L. Schaupp.

REPORT OF THE PRIZE ESSAY COMMITTEE

Prize Papers—Dr. George Dock, chairman of the Committee on Award of Clinical and Research Prizes, reported that the paper, "The Effect of Emetin on the Rabbit's Heart—An Electrocardiographic Study," by Dr. Phoebus Berman and Dr. William H. Leake had been awarded the Research Prize; and that the paper, "Intracranial Neoplasms—The Principle of Transmitted Pressure in the Production of Symptoms," by Dr. Cyril B. Courville had been awarded the Clinical Prize.

* * *

Interest in this competition was keener than in previous years. The committee has been continued and request that continued publicity be given.

In furtherance of this desire, the secretary again appends the rules governing the submission of papers and particularly calls attention to the fact that papers to be presented at section meetings may also be entered as prize papers under the following conditions:

All papers entered in the Clinical or Research Prize Contest may be read at the annual meeting of the California Medical Association and all papers prepared for the section programs may be entered in the prize contest under the following conditions:

Send two copies of the completed paper to the state secretary, Dr. Emma W. Pope, 1016 Balboa Building, San Francisco, before December 20, 1928, with an unsigned note that you wish your essay submitted for a prize and also read at the annual session. Sign your paper with a nom de plume. Also send your name in a sealed envelope with the nom de plume appearing on the outside. Use no stationery that in any way reveals your identity.

The state secretary shall deposit all nom de plume envelopes in a safe until the Prize Committee has made its decision.

The state secretary on receiving a prize paper which is submitted for presentation at the annual session shall submit said paper to the members of the Program Committee. The Program Committee will approve or disapprove it for place on the annual program. The Program Committee will inform the state secretary of its decision, and the secretary will then forward the titles of approved papers to the appropriate section secretary with a simple statement that the paper is acceptable for a place on the program. The Prize Committee will not be informed of this decision and action. A paper may be acceptable for a prize and not for a program, and vice versa.

The Prize Committee shall receive all papers which have been sent to the state secretary, whether approved for publication or not, on or before January 1.

The Executive Committee, at the first meeting after March 1 of a given year, shall open the nom de plume envelopes and furnish the secretary the proper names of the authors for the published annual program.

The Council shall consider the report of the Prize Committee at its first meeting of the annual session, and shall announce the result at the first general meeting of the Association. Both the clinical and research prizes by the California Medical Association are for $150.

General Rules Governing Papers—The Committee of Clinical Prize Awards desires to call the attention of the membership to the following rules governing

the submission of papers, for the benefit of those who desire to compete for the 1929 prizes:

1. Any member of the California Medical Association is eligible to compete for the prizes. Any question arising as to the eligibility of a candidate or the admissibility of his essay will be settled by the decision of the Council.

2. Manuscripts must be typewritten on one side of the paper; they must be double spaced; and they must not be folded or rolled. Illustrations or charts must be marked on the reverse side with the title of the paper to which they belong.

3. Essays must not contain more than four thousand words. In judging a paper the committee will take into account the basic importance of the work done and its novelty; the thoroughness with which the research has been carried out; the clearness with which it has been written; and the neatness of the manuscripts and illustrations.

4. Papers should be sent, preferably by registered mail, to Dr. Emma Pope, secretary of the California Medical Association, 1016 Balboa Building, San Francisco. They should be identified by a nom de plume or motto only. A separate envelope should be sent to Doctor Pope containing the author's name and his nom de plume or motto, so that after the award is made the name of the writer can be found. Any return addresses or distinguishing marks will be removed from the wrappers before the papers are turned over to the judges.

5. All papers must be in the hands of Doctor Pope before February 15, 1929, in order that the judges may finish their work in time for the meeting of the Association.

6. The judges reserve the right to withhold the award, in the event that no paper comes up to the standards of excellence they feel should obtain.

7. If, in the judgment of the editors of California and Western Medicine, and the editorial councilors, the paper on laboratory research is too technical or otherwise unsuitable for inclusion in California and Western Medicine the prize winner will be allowed to publish it in some special journal and will be required to make an abstract for the readers in California.

8. Inquiries relative to the prize contest should be addressed to the chairman of the committee, George Dock, M. D., Chamber of Commerce Building, Pasadena, California.

Notice of Error—Under minute No. 18 of the one hundred and seventy-second meeting of the Council, appearing in the April journal, instead of C. V. Thompson the name should read I. B. Thompson.

REPORT OF THE INDUSTRIAL MEDICAL SURVEY COMMITTEE

By Gayle Moseley
Chairman

The Industrial Medical Survey Committee was appointed by the Council at the last meeting of the State Association. The purpose of this committee was to make a study of industrial medical conditions and their effect on private practice. The scope of the work of the committee was also to include some report on the general trend of medical practice.

A list of questions was sent to forty-three county medical societies, and twenty-four replies were received. In addition to the replies from county societies, seventy-seven letters were received from individuals.

The county societies sending in answers represented 2742 physicians located in all parts of the state, and we believe is a good cross-section of general medical opinion on the questions asked. The list of questions and tabulated answers are attached to, and are a part of this report.

The following observations are based on the answers to the questionnaire and private correspondence with physicians interested in industrial medicine.

INDUSTRIAL MEDICINE

According to the information gathered by the committee it would seem that slightly more than 75 per cent of the regular practicing physicians are interested in industrial medicine. The majority of physicians seem to feel that the compensation law is a good thing and has worked out to the advantage of all parties concerned. The physicians are much better and more promptly paid for the treatment of industrial injuries than before the compensation law was passed. There does not seem to be as much dissatisfaction among physicians with the compensation law and fee schedule as we have been led to believe existed. The majority of physicians, at the present time, are willing to do compensation practice on the present fee schedule and find that the work is satisfactory. Particularly the industrial surgeons doing a large volume of work have no complaint. The present fee schedule seems to be fairly satisfactory. Some feel that the fees for certain things are too small, and a few say that the whole fee schedule is too low. Many complaints of the individual physician arise from either a misunderstanding or a lack of understanding of the compensation law.

It seems, from our observation, that many of the complaints about industrial medicine are from physicians who do very little compensation work and who are not thoroughly informed as to general compensation practice.

We believe that in the future there will be a much wider distribution of industrial work than there has been in the past, on account of the fact that more physicians are taking an interest in this kind of work and are more prompt in sending in reports which are necessary.

The most hopeful sign in industrial medicine is the tendency of physicians and representatives of insurance carriers to get together and discuss their mutual problems. There should be frequent meetings between adjustors' associations and physicians interested in industrial medicine. Such meetings go far toward solving many of the troublesome questions arising out of industrial practice.

We believe that if the Council would appoint an *industrial grievance committee* of two or three members who would take the time and trouble to answer complaints referred to the state society, that much good could be accomplished, and the profession at large would feel that the Council of the state society was at least making some effort to see that the individual physician got a square deal.

TREND OF GENERAL MEDICAL PRACTICE

The outstanding trend of medical practice as far as the physicians themselves are concerned, seems to be toward specialization and salaried positions. (An excellent report with statistics on these two subjects by Doctor Weiskolten of Syracuse, New York, will be found on page 1046 *Journal American Medical Association* of March 31, 1928.) It can also be said that medical practice follows the hospital.

It is clear that the great changes taking place in the business world must, in some measure, be reflected in the practice of medicine. The economic conditions that have brought about chain stores, chain banks, installment buying, must in time have their effect on every line of human endeavor. The great consolidations constantly taking place in the business world are causing a keener competition than ever before. Thousands of employees are being brought under one management, and the *health of these employees* becomes a vital factor in the success of the enterprise. Business men have learned from experience that good health among their employees pays big dividends, so now many department stores and industrial corporations have physicians regularly employed to look after the health of their employees as well as treat them for industrial injuries. This has opened up an entirely new field in industrial medicine and has provided many positions for physicians on either part or full-time salaries. Many of the industrial corporations which have either their own hospital organization or a mutual hospital association among their employees are now considering extending this medical and hospital service in a limited way to the families of their employees.

It is constantly being borne in on those who have to do with the problem, that the *cost of medical and*

hospital care is too great for the average wage-earner to meet. This is not the fault of the physician or the hospital, but seems to be caused by economic conditions which, at the present time, are beyond our control. The question of the cost of medical, hospital and nursing care is one that is receiving much study and is certainly deserving of continued consideration by the medical profession.

There are so *many organizations dealing with health matters,* that any consideration of the individual organization would be impossible in a report of this kind. Just to mention a few of these organizations whose work must have more or less influence on the general practitioner we have: federal government, state health boards, county health departments, health centers, city health departments, clinics (free and pay), county hospitals, industrial corporations, lodges, and hospital associations.

All of these and many more are engaged either in the prevention or treatment of disease.

It is apparent that each of the above agencies has its effect on the private practice of medicine, and as the dividing line between prevention and treatment becomes less marked the various public health agencies will have a greater effect on private practice than at the present time.

It is no doubt a question in the minds of some, whether or not the prevention of diphtheria, smallpox, measles, whooping-cough, scarlet fever, etc., belongs to the domain of the various health boards or the private physician. Many of the *county hospitals* are now taking pay, or part-pay patients, and physicians are donating a tremendous amount of time and skill to these institutions. It will be found that most of the county hospitals that are well equipped and have good accommodations are receiving pay patients, and this practice promises to increase very much in the near future and is one of the problems that should be carefully considered by the profession.

There seems to be another trend in the practice of medicine which is being brought about by the public rather than the physician and that is the tendency or seeming *desire of the public to purchase their medical and hospital care on the installment plan.* There has been an amazing increase of lodge and hospital association practice in this state, and we believe that this is a question which merits very careful consideration and study. These hospital associations have caused dissension and bitterness among medical men in some localities. If there is sufficient demand for this kind of service from the public, something along these lines is going to be worked out in response to that demand, and it seems to us that the wise thing for the medical profession to do is to meet the issue squarely and give the question the necessary study to determine what is the best course of action in the interest of the public and physicians.

These *hospital associations* have been one of the factors which show the great influence that industrial medicine has had on private practice. The working man has got into the habit of being cared for when injured in industry, and is now looking for the same thing in case of sickness.

Physicians have become accustomed to the accident fee schedule and can see no reason for not treating the same class of people for sickness according to this fee system provided the fee is paid as surely and promptly as in industrial injury cases.

Any discussion of this question is beyond the scope of this report. We simply present the views of physicians as expressed to the committee.

In conclusion it can be said that the *trend of medical practice* is:

1. Specialization.
2. Salaried positions.
3. Practice in hospitals.
4. Grouping of physicians in same building.
5. Groups of physicians coöperating; that is, men in different lines working together but not in partnership.
6. Diagnostic groups.

These are but a few of the tendencies of modern medicine, and we believe some of these tendencies are worthy of further study by the State Medical Association.

TABULATION OF ANSWERS TO QUESTIONNAIRE SENT TO COUNTY MEDICAL SOCIETIES BY THE INDUSTRIAL MEDICAL SURVEY COMMITTEE

This tabulation is based on replies received from twenty-four county medical societies and seventy-seven individual letters. In some societies the questions were answered by the secretaries and in others by a committee appointed by the society. A few of the societies sent a copy of the questions to every member of the society, and their reports were based on a tabulation of these replies.

The county medical societies sending in replies have a combined membership of 2742. We believe that these replies fairly represent the opinion of the average physician with reference to the questions submitted.

It is to be borne in mind that some of the questions were not answered, so that the tabulated number of replies is not the same to all questions.

	Society Yes	Society No	Individual Yes	Individual No
Q. 1. What proportion of the membership of your society is interested in industrial medical practice?	1	1	66	9
Remarks: Twenty-one gave the per cent interested, which averaged 80.25 per cent.				
Q. 2. In a general way, are the fees for industrial work satisfactory?	13	8	37	22
Remarks: Balance either not answered or very indefinitely.				
Q. 3. Are there any physicians in your territory treating cases not covered by the Workman's Compensation Law, but charging industrial accident fee prices?	6	14	7	57
Remarks:				
Q. 4. Is there any considerable number of persons in your locality being treated on a medical contract basis, such as members of lodges or other organizations that provide medical service for their members at so much per month?	14	18	13	56
Remarks:				
Q. 5. Are there any medical or hospital organizations in your community that offer medical service to individuals or families at a stipulated sum per month?	6	15	21	45
Remarks:				
Q. 6. In a general way are the dealings of the members of your society with the State Compensation Fund as satisfactory as with the private insurance carriers? If not, what are the chief complaints against the state fund?	13	7	56	13
Remarks:				
Q. 7. Does your county hospital take part-pay patients?	7	15	49	4
Remarks:				
Q. 8. What effect, if any, has industrial practice had on private practice in your locality?	Good 3	Bad 8	Good 13	Bad 23
Remarks: A few did not answer or gave very indefinite answers.	None 8		None 24	

REPORT OF THE COMMITTEE ON THE HISTORY OF MEDICINE IN CALIFORNIA*

By Emmett Rixford, M. D.
Chairman

Because of the press of other duties the chairman of the Committee on History of Medicine in California has been but little active during the past year, and hereby offers his apology to the society together with his regrets in the fact that he is obliged to be absent from this meeting. The regret is the greater since the meeting is held in the city of Sacramento which in the early days was the center of much professional activity in medicine. Here the oldest medical society in the state has had its home—and here, too, was held the meeting of organization of the Medical Society of the state of California, 1856. Here the first medical journal was established in that same year by Dr. John F. Morse, Sr., in the first of whose four numbers was published, *in extenso,* the minutes of the meeting of organization of the state medical society.

It was from Sacramento that the Lane Medical Library received one of its most important contributions, the library of the late Doctor Simmons, generously donated by his sons, and which contained much valuable historical material.

Here, too, lived Dr. Thomas W. Logan who in 1856 contributed to Morse's journal a series of articles on the history of medicine in California, consisting, however, largely of discussions of matters of climate as influencing health and of meteorological tables.

And in Sacramento lived Dr. James H. Parkinson, who as editor and publisher of the *Occidental Medical Times,* from 1887 to 1909, some twenty-two years, did much to preserve record of the activities of the physicians of northern California.

In response to a letter sent by the committee in 1925 to the secretaries of the forty-odd county and district societies some little valuable historical material has been sent to the committee, but so little that it would seem that the committee should make another effort to get someone in each county to compile a record of the activities of the local medical society and of the principal members of the local medical profession.

As an example of what is desired the committee wishes to call attention to the reports on the physicians and of the Medical Society of Placer and Nevada counties by Dr. Robert F. Rooney of Auburn, and Dr. Robert A. Peers of Colfax. As examples, as well as for the valuable historical material they contain, these papers should be published in the near future in California and Western Medicine and the committee so recommends.

Doctor Rooney, past president of the state society, and always a staunch friend of the organization and indefatigable worker for its advancement, has given a living picture of the conditions of practice in the old mining days, as well as a tribute to the magnificent character of a number of the early practitioners of medicine.

A few weeks ago the Council of the California Medical Association voted the committee one hundred dollars to further its efforts in gathering such material for this year. The fund has not been drawn upon for the reason that the year had practically passed and the time available was too short to make deserving use of the appropriation. The committee therefore recommends that this one hundred dollars be passed over to the committee for the ensuing year.

* The report of the Committee on the History of the California Medical Association was submitted by Emmet Rixford, chairman, at the one hundred and seventy-fifth meeting of the Council, held at Sacramento, May 2, 1928, and on motion of Kelly, duly seconded, it was

Resolved, That the report be adopted with the recommendations outlined.

PLACER COUNTY MEDICAL SOCIETY

By Robert A. Peers, M. D.
Colfax

President	Secretary	Year
Joseph Flint, Lincoln	R. F. Rooney Auburn	Nov. 1889 to Oct. 1891
T. M. Todd, Auburn	R. F. Rooney	Oct. 1891 to Oct. 1895
R. M. Stafford	R. F. Rooney	Oct. 1895 to Oct. 1896

No meeting was held by the society from April 7, 1896, until February 14, 1903, when the Placer County Medical Society was reorganized.

President	Secretary	Year
C. H. Bulson	R. F. Rooney Auburn	Feb. 1903 to Feb. 1904
T. M. Todd, Auburn (Died Sept. 1905)	R. F. Rooney	Feb. 1904
John T. Jones, Grass Valley	J. H. Mules Auburn	Nov. 1905 to Dec. 1906
Robert A. Peers, Colfax	G. H. Fay Auburn	Dec. 1906 to 1908
		Date Elected
Martin Schnabel, Newcastle	G. H. Fay	Dec. 1908
J. G. Mackay, Truckee	G. H. Fay	Dec. 1909
J. G. Mackay	J. F. White	Dec. 1910
J. F. White, Auburn	Grace R. White	Jan. 1912
G. H. Fay	J. G. Mackay	Dec. 1912
Henry T. Rooney, Colfax	Robert A. Peers	Jan. 1915
Henry T. Rooney, Colfax	Robert A. Peers	Dec. 1915
O. C. Hyde, Lincoln	R. E. Allen	Apr. 1917
O. C. Hyde, Lincoln	R. E. Allen	Dec. 1917
B. A. Woodbridge, Roseville,	Robert A. Peers	Feb. 1919
E. E. Ostrum, Loomis	Robert A. Peers	Jan. 1920
E. E. Ostrum, Loomis	Robert A. Peers	Jan. 1921
Charles J. Durand, Colfax	Robert A. Peers	Dec. 1921
Charles J. Durand, Colfax	Robert A. Peers	Dec. 1922
H. N. Miner, Blue Canon	Robert A. Peers	Dec. 1923
H. N. Miner, Blue Canon	Robert A. Peers	Dec. 1924
J.A. Russell, Auburn	Robert A. Peers	Dec. 1925

John Taylor Jones

John Taylor Jones, son of William C. Jones, was born at Grass Valley, June 14, 1875. He graduated from Cooper Medical College in December, 1898. Following graduation he was for some years intern at the Southern Pacific Hospital in Sacramento, under Dr. Thomas W. Huntington. Leaving Sacramento he associated himself with his father in practice in his native town of Grass Valley, where he remained until his death, November 19, 1917.

John Taylor Jones was an exceptional man. The writer knew him well during all his years of practice, having been closely associated with him both socially and professionally. As a man he was honest, straightforward, clean thinking; as a physician and surgeon he was, during his relatively short years of practice, one of the keenest diagnosticians and one of the most brilliant surgeons in northern California. The writer firmly believes had it not been for his untimely illness and death that the name of John Taylor Jones would have ranked with that of any of the most illustrious surgeons of this state. And with his brilliancy, his keen mind and his medical and surgical acumen, he combined a modesty of spirit and a winning personality which endeared him not only to his clientele, but also to his confrères. Doctor Jones served his county unit, the Placer County Medical Society, as president in 1906. He was also president of the Northern California District Medical Society.

*

Robert F. Rooney

The subject of this sketch was born June 17, 1842, in Melbourne, Province of Quebec, Canada. His preliminary education was obtained at Bishop's College Preparatory School at Lennoxville, Quebec, and he received the degree of M. D., C. M., from McGill University, March 31, 1870. After graduation he practiced first at Massawippi and later in Stanstead Plain, both in the Province of Quebec, until the spring of 1877 when he came to California, locating in Colusa County. The winter of 1877-78 was one of severe floods due to bursting levees. The hard practice in the flooded valley lands telling on the Doctor's not too rugged health, he came to Colfax, Placer County, in May, 1878. He remained in Colfax until December, 1881, when he again moved, this time locating in Auburn, the county seat of Placer County. Here he has remained ever since and is still practicing

his profession (March 31, 1926) exactly fifty-six years from the date of his graduation at McGill.

Dr. Robert F. Rooney was for many years one of the most prominent physicians of northern California. Possessed of a splendid mind, blessed with a genial, kindly manner, always a student, ever ready to answer the call for aid whether coming from a patient or a brother physician, he was and is beloved alike by the laity and his professional colleagues.

The writer came to Placer County in 1899 when the doctor was still active enough to be actively engaged in professional work. At that time Doctor Rooney was the chief consultant for a very large section of Placer County and parts of Nevada and El Dorado counties. It was with pleasure to himself and with profit to his clients that the writer frequently sought the counsel of Doctor Rooney and he shall never forget the kindly bedside manner, the thorough painstaking methods of examination, the wise counsel and the high professional standards of his older brother practitioner. Never did the doctor refuse a call for assistance and never did he fail to uphold his younger confrère before his client and family. Differences of opinion and friendly advice were reserved for the quiet of private conversation.

Doctor Rooney was one of the founders of the Placer County Medical Society. His membership has never lapsed and for years he was the secretary. He was elected president of the Medical Society of the State of California in 1905, holding the office for two successive years, 1905-6 and 1906-7.

The doctor still practices medicine in Auburn. His step is not so brisk, his eye perhaps not so keen, nor his hand so steady, but his mind retains its brightness, his tongue has not lost its ready wit and his heart still beats true. He is still the guide and friend of numerous families of Placer County. It is always a joy to the writer to meet him and it is with regret that he feels the limitation of his vocabulary in attempting to write this sketch so as to do justice to the subject. He can do no better in closing than to say that the general practitioner of the old school, the general practitioner whose praises we hear sung today, the general practitioner whose passing we so regret, is well exemplified by the subject of this sketch, Dr. Robert F. Rooney, 84 years young, General Practitioner of Auburn, Placer County, California.

* * *

PLACER COUNTY MEDICAL SOCIETY

By R. F. Rooney

Auburn

Excerpts from Minutes of Meetings

Auburn, California, June 12, 1889.

Dear Doctor:

We, the undersigned physicians of the county of Placer, being desirous of establishing a greater degree of fraternity and closer social intercourse, one with another, cordially invite you to meet with us at the Court House, in Auburn, on the twenty-seventh day of June, 1889, then and there to form a

County Medical Society

and to take such steps as may be deemed expedient to make such an organization permanent. And we would also invite you to present a paper upon some medical or surgical topic, such as you may have leisure to prepare.

T. M. Todd
R. F. Rooney
H. N. Miner

The above notice was the initial move toward the formation of a county medical society.

The following list contains the names of the first nine members who signed the by-laws:

The meeting took place on the dates written and the society was organized under the name of the Placer County Medical Society. Dr. Joseph Flint, of Lincoln, was elected president, and Dr. R. F. Rooney of Auburn, secretary.

A constitution and by-laws were subsequently adopted and the society is still a going concern.

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Auburn, Placer County, California,
June 27, 1889.

In accordance with the foregoing notice the following named physicians met at the Court House, in Auburn, at 2:30 p.m., on the date above written, namely: Doctors N. Martin, J. F. Flint, T. M. Todd, H. N. Miner, Mary Briggs, A. M. Stafford, Theo. Olmstead, and R. F. Rooney.

On motion, Dr. N. Martin was elected temporary president, and R. F. Rooney, secretary and treasurer.

Moved, seconded and carried, that a committee of three be appointed to formulate a Constitution and By-Laws and also a fee-bill for consideration and adoption by this society. And that they shall call another meeting when prepared to submit the same.

Moved, seconded and carried, that Doctors Rooney, Olmstead and Miner form the committee.

Moved, seconded and carried, that an assessment of $2 be levied on each and every member present.

Moved, seconded and carried, that the society do now adjourn, subject to the call of the Committee on Constitution.

Receipts $14.

(Signed) R. F. Rooney, *Secretary.*

Approved November 16, 1889.

❦

Auburn, California, February 14, 1903.

A meeting of the practitioners of regular medicine was called for this time and place by Dr. R. F. Rooney, for the reorganization of the Placer County Medical Society.

The following named men were present: Doctors T. M. Todd, C. H. Bulson, J. F. White, G. H. Fay, and R. F. Rooney.

The meeting was called to order by Doctor Rooney and the reasons for calling the meeting explained, namely: to get in line with the state society.

Doctors C. H. Bulson and R. F. Rooney were elected temporary president and secretary.

The Constitution and By-Laws of the old society were then adopted, as amended, and written down in the Book of Constitution and By-Laws.

After the adoption of the Constitution and By-Laws an election of officers was held. Dr. C. H. Bulson was elected president, and Dr. R. F. Rooney was elected secretary.

All the members of the old society now in the county were accepted to membership in the society, as reorganized. These are shown in the Roll of Membership and by the minutes of the last meeting of the old society and are as follows: Robert F. Rooney, Martin Schnabel, Thomas M. Todd, Benjamin A. Mardis, J. C. Ford, C. R. Nelson and R. H. Ashby. Doctors C. H. Bulson, J. F. White and G. H. Fay being present today, became initial members under reorganization. Dr. R. A. Peers and Dr. B. Woodbridge were balloted for and elected and the foregoing constitutes our membership.

The following Preamble and Resolution was presented by the Secretary and unanimously adopted:

Whereas, there now being several new bills pending

ROLL OF MEMBERSHIP

Name	Age	Nativity	Date of Graduation	College
Robert F. Rooney	47	Prov. of Quebec	Mar. 31, 1870	University of McGill
Martin Schnabel	42	Germany	Nov. 1873	University of California
Theo. Olmstead	33	Illinois	Nov. 17, 1887	Cooper Medical College
Thomas Milton Todd	50	Virginia	March, 1869	Miami Med. Coll., Cincinnati
Jos. Flint	77	Maryland, E. S.	March, 1834	University of Maryland
Wm. N. Finney	42	Illinois	Mar. 5, 1878	No. Med. College St. Louis, Mo.
A. M. Stafford	26	Prov. of Ontario	March, 1888	Med. Dept. Univ. N. Y. City
J. M. York	38	Illinois	March, 1885	Coll. Phys. & Surg., Keokuk, Ia.
J. S. Wheeler	39	England	March, 1891	Coll. of Phys. & Surg., Edinburgh

in the Legislature of California, introduced for the purpose of changing our existing medical laws, and

Whereas, we, the members of the Placer County Medical Society, believe the present laws to be just and equitable to all, be it therefore

Resolved, that the Placer County Medical Society views with disfavor any and all new legislation upon the subject, and earnestly asks our county representatives in both the state assembly and senate to do all in their power to defeat the same.

Moved and carried that on the approval of our Constitution and By-Laws by the president of the state medical society that Doctor Rooney be considered our duly elected delegate to the legislative branch of the California State Medical Society.

Assessments of $2 were paid by:

C. H. Bulson	$2.00
T. M. Todd	2.00
J. F. White	2.00
G. H. Fay	2.00
R. F. Rooney	2.00
Making, in all	$10.00

Meeting then adjourned.

(Signed) R. F. Rooney, *Secretary.*

(Signed) C. H. Bulson, *President.*

Approved: February 6, 1904.

* * *

Reminiscences

R. F. Rooney was the first delegate elected to represent the society under the reorganization of the state society. Under reorganization, Nevada, Sierra and El Dorado counties are all members of the Placer County parent society, and are represented by the delegate appointed by it, but their medical histories are not included in these pages.

The writer of these pages has no intention of dwelling upon the members of the medical profession who are still living in Placer County, but will do his utmost to recall the names of those who have passed on, even if they did no more than serve, to the best of their ability, the needs of the public. For these men a notice of some act or item is worthy of record in many cases.

In "the days of old, in the days of gold," the medical profession gave its members in large numbers to the search of the shining metal; and as disappointment came to the greater number, they naturally turned back to their first love.

Their faces pass upon the screen of time in large numbers, and their names have faded together with the prosperity of the places in which they lived, and are all but ghosts.

The writer came to the county half a century ago, when many of the old miners were still hale men, and full of anecdotes of the early days in localities where no traces of once-thriving mining towns now exist.

The first name that comes down to us is a certain Doctor Weeks, who had his card in the Placer *Herald* at the beginning of the year 1852, and the only record of his memory is that he was shot in a street fight, and as he fell he called out to a bystander, "Anotha South'n gentleman gone, suh"; but he did not go at that time, but "lived to fight another day."

In the halcyon days of Michigan Bluff, when Leland Stanford lived there and made his first stake, a Doctor Fagin attained much favor as a successful man on the Forest Hill Divide, and when the tide of prosperity waned there, he went to Santa Cruz, where he died in good repute.

O. H. Petterson was an early practitioner in Iowa Hill and died there in the eighties. His favorite dressing for wounds was the application of Jamaica rum, which he poured over wounds quite freely.

The writer remembers an old patient of his who related his experience of its use at Petterson's hands, in a compound fracture of the leg. "I lay there and used up thirty dollars' worth of rum on that leg, and then had to go to San Francisco and have Cooper cure it up. Just think of the loss of all that good rum that I could have had a h—— of a time drinking, all gone to waste!" He seemed to regret the loss of the rum rather than the loss of time and the pain that he had endured.

* * *

Biographical Sketches

Noble Martin, M. D.

Born in Vermont in August, 1820. Died in Berkeley while on a visit there in August, 1896. Studied medicine under a local physician in Fredonia, N. Y., where his father moved when Noble was a boy. Never graduated from any school of medicine, but received a doctor's license in California through "years of practice" provision of the California medical laws, and the influence of Levi C. Lane, M. D., who was his personal friend.

In 1852 he came to California to "make his fortune" with the full intention of returning after it was made, and to complete his medical education. He started mining in Red Dog, Nevada County, but there being no physician in that portion of the "diggin's," he gradually fell into practice in that region, serving the surrounding mines in Hunt's Hill, You Bet, Chalk Bluff and Little York, now all "ghost towns."

In 1870 he purchased the property of Dr. H. W. Nelson, in Dutch Flat, where he spent the rest of his life in the practice of medicine. Here, among the miners he spent his days, riding through snowstorms, fording swollen streams, stumbling over boulder-strewn roads in the darkest nights, mending broken bones, amputating crushed limbs, and watching day and night, over the lives of those in need of his services.

He was a Democrat of the deepest dye, and when you found a Democrat who was a Vermonter in those days he was was a Democrat indeed. His real work was shown by the fact that, fierce party man as he was, he was once sent to the Legislative Assembly, twenty-ninth session, and at a later period for a term in the State Senate, for Placer, Nevada, and El Dorado counties, in a strong Republican district. He would roar and snort like an old warhorse in battle when among his Republican friends, and threaten them with dire things if he ever got them where they needed him, and when they really required his services, would tend them as tenderly as a mother would her babe.

One-half of his work was never charged against his patients, and few of his bills were ever presented. When asked for his bill he would name some inconsiderable amount and would stamp and roar if a well-to-do patient would try to make him accept a larger fee. And thus he was always a poor man, and died so, but nothing could change him.

He was a clever mechanic and could manufacture the most wonderful splints out of any old material that came to hand, and turned out very satisfactory work in all kinds of fractures. These were very frequent among miners working in the dangerous hydraulic mines that surrounded Dutch Flat, and injuries requiring amputation of limbs were not infrequent, and these also he attended to satisfactorily.

In fact, Noble Martin was a rough diamond and well worthy of remembrance in that part of Placer County. He was scantily furnished with medical learning, but had an abundant supply of shrewd native good sense, a good heart, and a deep sense of duty. When the latter called, he let no obstacle stand in his way. No winter storms, no swollen streams, no indistinct trail, no darkest night stopped him from doing his best to aid, to the utmost of strength and ability, the call of suffering humanity.

❊

H. W. Nelson

Was probably the most prominent early day surgeon of Placer County. The scion of a prominent Canadian family, graduate of McGill University in the forties, he came to California in the early fifties, and as far as known located first at Greenwood, El Dorado County, which was then a wonderfully rich placer diggings. While living there a rather remarkable event occurred in his life. He was very fond of sport and brought a good double-barreled gun with him from Canada, and in his spare hours hunted quail

in the neighboring ravines to pass the time and help out the usual miner's diet of beans, bacon and flapjacks.

One day, as he was hunting up a ravine, a man on horseback appeared on the ridge above him and called in an excited voice for him to seek safety in flight, as a large grizzly bear was coming down the ravine. Nelson called back "let him come" and stood his ground. In a short time, sure enough, a huge grizzly did appear out of the brush, and sat up on his haunches a few feet away at the sight of the man. Nelson immediately fired both loads of quail shot into the bear's nose and the animal fell dead at his feet, the shot having found its way direct to the brain. This digression is made only to show the man's courage.

About 1860, Nelson left Greenwood for Dutch Flat, and practiced there until 1872, when Martin purchased his practice and he removed to Sacramento, where he married and lived until some time in the end of the century.

He lived in Placer County while the Central Pacific Railway was building and did all its surgical work and finally left there with the promise of securing the office of surgeon to the railway at Sacramento, but the promise was not fulfilled, Doctor Nixon getting that position.

Doctor Nelson was a bold and able surgeon for that day and time; even entering the abdominal cavity to remove tumors, doing bone work of all kinds and a large amount of work on hemorrhoids.

He left the county practically a poor man as money never stuck to his fingers. Besides, he was a sport inside as well as outside, and would back a pair of measly sevens as enthusiastically as the ordinary sport would back three aces.

But—"e'en great Jove nods."

❊

Thomas Milton Todd, M. A.

Born in Wheeling, West Virginia, April 6, 1839. Received his M. A. degree from Washington and Jefferson College, Washington, Pa., and M. D. from Miami Medical College, Cincinnati, Ohio.

Previous to taking his medical course he served three years in the Union Army.

Came to Auburn, Placer County, in 1871, where he resided until his death in September, 1905. In 1875 he was appointed county physician in charge of the county hospital, an office which he retained until death. He was a member of the state medical society, and headed the call for a county society, in which he took great interest until his death.

Until 1883, in which year he met with an accident that robbed him of a large part of his vigor, he was a very active man, and was called to all parts of Placer and the neighboring counties. He was an amateur musician of no mean note and was known as a fine violinist and pianist. In fact, he could have taken his place in any professional orchestra. He was passionately fond of music and never missed a season of opera when possible to leave his work.

Doctor Todd was a man far above the average both in surgery and medicine, but where he shone was as a family physician, councilor and friend. That *rara avis*, that has gone out of fashion. As an obstetrician he stood above all outside of the large cities, where wealth of material makes men great. That he was a fine man is shown by the fact that, even yet, twenty years after his death, he is remembered with love and gratitude in hundreds of hearts. That speaks volumes for fine qualities in a man in this fast day and age.

In 1883 he met with a serious accident that marred his life to a great extent. At that period he drove a pair of spirited horses which, alarmed by a passing railway train, ran away and threw him over an embankment, fracturing one thigh, his left arm near the wrist, and drove his left malar bone into the antrum. He lay for several months before recovery, and was left with a decided limp and inability to play his beloved violin with his old skill, owing to muscular interference with action of his left hand. Ever afterwards he was timid in driving at night, and chiefly confined himself to practice in town, or its immediate vicinity. But it is as a fine citizen, a skilled physician, a staunch friend and a gentle nature that he is remembered. The writer had twenty-five years of friendship with him, and still grieves his loss.

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S. F. Chapin

Graduate of an eastern college, and a man of skill. Lived and practiced in Auburn in the late sixties and left for other fields. In 1886 he returned to Auburn, where he remained until his tragic death in the spring of 1889.

That year was one marked by heavy rains, and on the day of his death it rained very heavily and the Auburn Ravine ran bank full. The doctor was called to the neighboring hamlet of Ophir and, as there was no bridge across the ravine on the short route to that place, he rode through the water which was then at a dangerous stage. While gone there was a tremendous fall of rain, and on his return the water was much higher. He ventured in, rather than to return and take a longer route, and was swept to his death in the raging water.

Another good man victim to his call of duty.

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John Tivis Hamilton

In the 50's and early 60's when what are now two of Placer County's past cities, Virginia Town and Gold Hill, were populous mining centers, and our present Clay City of Lincoln was fast becoming a grain center, John Tivis Hamilton practiced for a couple of years in Lincoln and then moved to Wheatland, where he later died.

There is little to record regarding his stay in Placer, but one incident in his practice is worthy of record, as showing what can be done when necessity drives.

A man fell from the seat of a high farm vehicle—kind not revealed—and struck the ground on his head and received a depressed fracture of the skull. Hamilton was sent for, diagnosed the injury, cut down upon the fragment and, having no trephine, borrowed a household gimlet, bored it into the depressed fragment and pulled it into place. He then stitched the wound and in a few days the patient returned to his work. Some of the old residents still recall the incident.

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A. P. Reudy

Born and educated in Switzerland, where he graduated in arts and medicine. He came to America and settled in Philadelphia. Threatened with T. B. he came to California, and to Forest Hill in 1880, where he lived until 1896, when he went to Colorado on a visit and committed suicide there on realizing that he was tabetic.

Doctor Reudy was a very eccentric man, but able in his profession. He had an income which made him independent, and was very arrogant and overbearing, both to his patients and acquaintances. If anyone employed and did not pay for his services, he would never attend anyone who was his patient's friend. But *nil nisi,* etc.

❊

B. A. Mardis and E. W. Twitchell

Now residents of San Francisco and both men of mark in that city, made their first bow to the public on the Forest Hill Divide, when it was the field of large mining interests in the eighties and nineties.

Of the living physicians of the county the writer will not speak, only to say that first class surgeons and physicians can be found in Placer, as able as can be found anywhere. Men who have given their best to the people they serve, for the greater part of their lives, and who have earned, and do earn, the confidence and trust of their patients; also the younger men who are able to serve better by the aid of modern hospitals and the newer lights of science.

Among these we particularly point out the grand work done in the Colfax School for the Tuberculous, conducted by Robert A. Peers, aided by his able assistants.

We also wish to close by speaking of the Weimar Sanatorium, for the care of tuberculous poor of several counties of the central portion of the state,

where these unfortunates are given a home under the most careful treatment and favorable climatic surroundings.

In conclusion let the writer say that he has no doubt made some errors and omissions in these pages, but none by intent. If any critic wishes to arise and . . . ! Just let him try to dig up facts in his own graveyard and see how he will succeed. He will find that he will get his facts as the Scotchman jokes—"wi' defficulty."

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Members of Placer County Medical Society who were residents of Nevada County:

WILLIAM C. JONES

Born in Athens, Tennessee, August 25, 1833. Graduate of Bellevue, New York.

Shortly after graduation in the early 60's he came to California and for a short time took up professional work in Cisco, and then in Truckee, while the Central Pacific Railway was being built over the Sierra Nevada. In those localities, with Dr. H. W. Nelson at Dutch Flat, the needs of the thousands of men employed on this great railway project were cared for by these two young surgeons. They were both well educated and well equipped in courage and skill and did their work to the satisfaction of all. They were fast friends and made a fine team. Fast friends everywhere but over the chess board. There they were well-loved enemies, often spending whole nights trying to outmeasure each other until the new day surprised them, still fighting. The two men were a marked contrast. Nelson was a broad shouldered six-footer, with a piratical mustache which he trained over his ears, the ends trailing down upon his coat collar. Jones was medium sized, with a slight scholarly stoop and an animated face, and, when the writer knew him, beardless.

The railway reached Truckee and soon passed on into Nevada, and Jones removed to Grass Valley in Nevada County, where he finished his life's work, dying there December 28, 1903, lamented by old and young. His was a kindly and gentle nature, combined with a fine intellect and great courage. The writer first met him in the summer of 1878, in a woodchopper's cabin, halfway between Colfax and Grass Valley, and the meeting there was the beginning of a friendship that lasted until his death. He was a wide-awake man, ever grasping for new truths. His life in Grass Valley was a model for the small town man and he was very successful in all ways. He educated three sons in his own profession, and one in the law, and is survived by two sons and one daughter.

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CHARLES WILLIAM JONES

Son of W. C. Jones. Born in Truckee, California, July 23, 1869. Died in San Francisco, December 9, 1905.

Graduated from Cooper College as M. D. in 1891. He practiced for a time in Grass Valley with his father, later removing to San Francisco where he died.

Charles William Jones had a brilliant mind, and gave promise of becoming an able surgeon, but death soon ended his hopes and ambitions. He had a suave, gentle way with his patients that bound them to him with the strongest ties, and in return he gave them of his best. He was a fine man, cut down in the flower of his manhood.

COMPONENT COUNTY SOCIETIES

ALAMEDA COUNTY

The regular meeting of the Alameda County Medical Association was held at the Ethel Moore Memorial Building, on the evening of April 16.

The program of the evening was presented by the staff of Alameda County Public Health Center consisting of three papers. The first was by Dr. Joseph C. Raphael on "Pernicious Anemia Treated by Liver Diet." Doctor Raphael reviewed briefly the diagnostic laboratory tests in this disease emphasizing the importance of macrocytosis, high color index, achylia gastrica, and a high bilirubin content in the plasma. The doctor reported four cases all treated by the use of fresh liver or liver extract. Three showed a prompt and marked improvement.

The second paper of the evening was by Dr. Harold G. Trimble on "Chronic Non-Tuberculous Infections of the Respiratory Tract." He discussed all grades of infections of this system from chronic bronchitis to bronchiectasis, illustrating his remarks with case reports and x-ray films, discussing the technique of administration and the value of lipiodol in these cases.

Dr. Hobart Rogers reported a case of *Staphylococcus albus* infection of the blood stream, with recovery.

The usual social hour, with refreshments, followed the scientific program.

GERTRUDE MOORE, *Secretary.*

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LOS ANGELES COUNTY

The Los Angeles Obstetrical Society held its regular May meeting on the 8th inst. Case report of acute yellow atrophy of the liver was given by Dr. B. J. Hanley, the patient being only two and one-half months pregnant. Dr. W. C. McKee reported a severe postpartum hemorrhage from a retained placental island, there being no vascular attachments to the placenta. Dr. Clayton R. Johnson, by invitation, discussed his mode of radiographic pelvimetry, by which he is enabled to measure within two millimeters of error the pelvic diameters. This was illustrated by a series of films demonstrating several types of pelves and the clinical data given for comparison. The method is relatively simple and has been checked on several occasions by direct measurement at operation.

Dr. Gail Ferensen was elected to membership.

WILLIAM BENBOW THOMPSON,
Secretary Obstetrical Section.

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ORANGE COUNTY

The regular monthly meeting and dinner of the Orange County Medical Association was held Tuesday, May 8, at the Santa Ana Country Club.

Dr. W. H. Kiger, Los Angeles, new president of the California State Medical Society, made his first talk since election at the convention in Sacramento.

Dr. C. G. Toland of Los Angeles gave the paper of the evening on the rare subject of "Cysts of the Liver."

Doctors R. A. Cushman and Harry E. Zaiser gave interesting reports of the state convention.

Action was taken to have committees investigate and coöperate in the work of the Orange County Tuberculosis Association's work among the undernourished and tuberculous children of the county. The preventorium in the Santa Ana mountains is nearing completion, and a school is to be built this summer for an all-year camp.

F. HAROLD GOBAR, *Secretary.*

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SANTA BARBARA COUNTY

The regular meeting of the Santa Barbara County Medical Society was held in the banquet hall at the Santa Maria Inn, Santa Maria, with President Sansum in the chair.

A chicken dinner was served at 7 o'clock to thirty-three members and three visitors.

Following the dinner, the society went into executive session, at which Doctor Schwalenberg was unanimously elected into membership in the society.

President Sansum announced that the next regular meeting would be a dinner meeting at the University Club in Santa Barbara.

At the opening of the scientific program, the gavel was given to Dr. O. C. Jones of Santa Maria under whose auspices the meeting was held.

He introduced the first speaker of the evening, Dr. Howard Cooder of Los Angeles, who gave a résumé of the methods of caring for physically deficient children in public schools. His talk particularly stressed the classification and methods for correction of posture, illustrated with slides. This paper was afterward discussed by Doctors Lamb, Jones and Spaulding.

Dr. Carl R. Howson of Los Angeles then gave a paper on "Heliotherapy in Pulmonary Diseases,"

which was discussed by Doctors Williams, Henderson, Eaton and Jones.

Both papers were most thoroughly enjoyed by the membership, and it was unanimously agreed that the annual pilgrimage was a huge success.

WILLIAM H. EATON, *Secretary.*

SAN BERNARDINO COUNTY

Minutes of the meeting of the San Bernardino County Medical Society, held at Loma Linda, Tuesday, May 8, at 7 p. m.

Dinner was served at 7:30.

Following the dinner there was a brief address by Doctor Burguson, the new superintendent of the Loma Linda Sanitarium. Doctor Moseley spoke briefly in response.

The scientific meeting was opened at 8:15 by the president. Minutes of the previous meeting were read and approved. The letter of the State Medical Examiners regarding lay anesthetists was read. The letter from the California Federation of Women's Clubs regarding compulsory pasteurization of milk was read, as was also the reply of the California Medical Milk Commission to a similar letter. The action of the Board of Councilors in refusing coöperation in this movement was explained. By the motion made by Doctor Gibbs, and seconded by Doctor Hilliard, this action of the Board of Councilors was affirmed by the society. Brief reports on the state meeting just concluded were made by Doctors Moseley, Curtiss and Roblee.

The program was then entered upon, position of the speakers being reversed in order to permit Doctor Leake's early return to Los Angeles.

At the conclusion of the meeting announcement was made that the June session would be held at the Mojave River Valley Hospital in Victorville.

Meeting closed at 10 p. m.

E. J. EYTINGE, *Secretary.*

SAN DIEGO COUNTY

About twenty-five of our members attended the state meeting in Sacramento and enjoyed the splendid hospitality of our northern brothers.

Following Doctor Kerr's talk on diseases of the heart while in San Diego recently, many of our members who attended the state meeting at Sacramento lingered with much interest about the exhibit of injected hearts prepared under Doctor Kerr's supervision at the University of California Medical School.

Appreciating the honor of entertaining the state society, which voted to meet in Coronado in 1929, already the local society is organizing its committees and getting ready to give its visitors a generous mead of San Diego's well-known hospitality.

The May meeting of the San Diego County Medical Society was held at the San Diego Athletic Club. After dinner the program was a medical motion picture film—"The Diagnosis and Treatment of Infections of the Hand." This is the first of a series of medical motion picture films to be shown here which are being produced by the Eastman Kodak Company in conjunction with the Committee on Medical Motion Pictures of the American College of Surgeons.

The April dinner of the society held at the Golden Lion Tavern featured a talk by Dr. J. Ross Moore of Los Angeles, who gave a very interesting discussion of the course and selective treatment of syphilis of the nervous system.

During July and August the society will recess, as is its custom.

ROBERT POLLOCK.

SAN JOAQUIN COUNTY

The regular meeting of the San Joaquin County Medical Society was held Wednesday evening, May 9, in the hall of the Medico-Dental Club, 242 North Sutter Street.

The meeting was called to order at 8:30 p. m., with Dr. J. J. Sippy, president, in the chair, and twenty-six members in attendance.

Minutes of the previous meeting were read and approved.

After the business before the meeting had been disposed of, the chair introduced Doctor Stanley H. Mentzer of San Francisco, who delivered a most instructive and interesting lecture on "The Status of Gall-Bladder Surgery," admirably illustrated with a series of stereopticon slides. The following are the conclusions:

"1. Gall-bladder surgery is fairly well stabilized at present.

"2. Cholecystectomy comprises about 90 per cent of the gall-bladder operations of today.

"3. Surgery in gall-bladder disease should be based on the clinical symptoms rather than the local pathologic changes.

"4. There are definite indications for saving the gall bladder whenever possible, especially in obstruction of the common duct and certain liver and pancreatic diseases."

FRED J. CONZELMANN, *Secretary.*

STANISLAUS COUNTY

Friday, April 13, was the annual ladies' night of the Stanislaus County Medical Society. Forty-two members and their ladies were present, with Dr. and Mrs. L. P. Player and Dr. Hans Lisser of San Francisco as guests. Dinner was served by the Business and Professional Women's Club of Modesto at the Women's Improvement Club building, and a short entertainment was given. After dinner the ladies enjoyed an evening of bridge.

Our meeting was called to order and the society voted to increase our subscription to *Hygeia,* as the county librarian reports that it is widely read and not enough copies are available. At her suggestion the secretary ordered fifteen copies.

Dr. F. R. DeLappe, the councilor for the fourth district, reported on the activities of the State Association for the past year and urged all members to attend the state meeting in Sacramento.

Dr. L. P. Player made an interesting short talk, illustrated with lantern slides, on kidney lesions.

Dr. Hans Lisser gave the main address of the evening, discussing pluri glandular syndromes. He emphasized the fact that most of the so-called pluri glandular syndromes are in reality due to involvement mainly of one gland. He showed many interesting lantern slides and discussed dosages and use of gland products giving many useful and practical suggestions.

No further business was transacted, and the meeting was adjourned by the president, Dr. J. W. Morgan.

R. STEWART HIATT, *Secretary.*

CHANGES IN MEMBERSHIP

New Members

Alameda County—Max R. Boe, Charles F. Crittenden, Douglas D. Stafford, Alameda; Paul M. Ellwood, Lloyd E. Lacey, Oakland; Helene E. Schultz, Berkeley.

Imperial County—Harold J. Gregg, Calexico.

Los Angeles County—Tullio Balboni, Nathaniel Bercovitz, Guy Bernard Desparois, Mabel Durbin, W. LeRoy Fuller, Robert W. Lamson, Allen S. Martineau, Charles L. Morris, William B. Pickrell, Orlyn B. Pratt, Charles G. Stivers, J. M. Stoddard, Los Angeles; Milton H. Damron, Archie A. Jones, V. DeMott Sedgwick, Long Beach; William F. Kroener, Whittier; Clarence J. Ryan, San Pedro; Louis W. Schreiber, Santa Monica; Harold W. Wright, Beverly Hills.

San Bernardino County—Emil W. Meyer, San Bernardino.

San Diego County—C. Victor Bernardini, J. Van Becelaere, San Diego.

San Francisco County—Ernest M. Hall, Joseph

Shiang-Min Lee, William Peacey Shepard, Huldah E. Thelander, San Francisco.

Ventura—Jesse A. King, Ojai.

Transferred Members

Proctor W. Day, from Marin to Sacramento County.

Deaths

Hartley, John Davis. Died at La Jolla, California, May 2, 1928, age 78 years. Graduate University of Michigan Medical School, Ann Arbor, 1873. Licensed in California, 1881. Doctor Hartley was a member of the San Diego County Medical Society, the California Medical Association, and a Fellow of the American Medical Association.

Stoddard, Charles S. Died at Santa Barbara, May 18, 1928, age 82 years. Graduate of Bellevue Hospital Medical College, New York, 1883. Licensed in California, 1886. Doctor Stoddard was an honorary member of the Santa Barbara County Medical Society, the California Medical Association, and the American Medical Association.

UTAH STATE MEDICAL ASSOCIATION

W. R. CALDERWOOD, Salt Lake.....President
E. H. SMITH, Ogden.....President-Elect
M. M. CRITCHLOW, Salt Lake.....Secretary
J. U. GIESY, 701 Medical Arts Building, Salt Lake.....
.....Associate Editor for Utah

OFFICIAL NOTICES

1928 ANNUAL SESSION

The annual state association meeting will be held in Ogden, June 29–30 of this year. This will be a two days' session, with a banquet as the closing event, at the Hotel Bigelow on the night of the 30th.

There is a good program assured with an attractive list of speakers to cover the various subjects embraced by the program as at present outlined. Official programs will be mailed to the members of the component societies later. But it is not too early to begin making plans to attend. This is the first meeting held in any city in the state for several years, and it is hoped that the attendance will be large. The Weber County Society acting as hosts are prepared to show everybody a good time.

The postgraduate course, which has recently been combined with the state association meeting will this year be postponed until the early fall. It is proposed to furnish a very attractive course of instruction at that time.

* * *

Now that we are unfortunate enough to have an occasional case of infantile paralysis here and there throughout the state, it does not seem amiss to suggest that it would be well for the State Board of Health to arrange for a supply of convalescent serum to be kept on hand. This policy is followed by other boards of health to advantage, but as yet we in Utah are not prepared to use this means of combating this disease without applying to outside sources for the means, or else endeavoring to discover some voluntary donor from the community at large. And voluntary convalescent donors are not always easy to find when an emergency arises.

* * *

Typhoid Fever

The following letter received from the Utah State Board of Health should be of interest:

Salt Lake City, Utah,
April 30, 1928.

Dear Doctor: There is no disease in which the laboratory findings are more helpful to the clinician in making an early diagnosis than that of typhoid fever. An early diagnosis of this disease has a twofold advantage; first, that the patient may receive the proper care and treatment, and second, that those who come in contact with the infected individual may be properly protected to prevent further spread of the disease.

The question arises as to the best methods of laboratory diagnosis. Basing our opinion on previous experience which shows that an individual sufficiently infected with *B. typhosus, B. para* "A," and *B. para* "B" to produce the disease will give a positive blood culture in most cases as soon as the clinical symptoms are noted. The organisms are demonstrable in the feces about seven days after the onset of the disease, and in the urine in twelve to fifteen days. The Widal is not of any clinical value until after the patient has set up an immunity sufficient to agglutinate active organisms of the same strain. This process requires about twenty-one days. In order to expedite a diagnosis of this malady it is respectfully suggested that a blood culture be sent to the laboratory as soon as the first clinical symptoms appear, and the diagnosis confirmed by a feces culture in seven to ten days.

We wish to impress upon you our desire to offer every assistance possible to aid you in your diagnostic and prognostic problems, and have available for your immediate use containers with an especially prepared medium for typhoid culture of blood and feces. We will be glad to furnish the containers upon request.

Hoping to be able to serve you at all times,

Very truly yours,

Utah State Board of Health.
George J. Clark, Director,
Bacteriological Laboratory.

COMPONENT COUNTY SOCIETIES

WEBER COUNTY

Minutes of the Weber County Medical Society held April 10. Special meeting was called at 7 p. m. at the Dee Hospital, thirty-six members were present.

Dr. Franklin B. Ewald of Denver University gave a very interesting paper on "The Problems of Psychiatry." Dr. Garland H. Pace of Salt Lake presented a case of chronic encephalitis, which was discussed by Doctor Ewald.

Meeting adjourned.

* * *

Meeting of the Weber County Medical Society held April 19, at the Hotel Bigelow, President W. R. Brown presiding. Thirty-six members were present and five members of the Box Elder County Medical Society. Minutes of the previous meeting were read and approved.

Dr. E. N. Roberts of Pocatello talked on "Surgical Errors." This paper was very instructive and encouraged the surgeon to be more cautious in accepting a hasty diagnosis. Numerous cases were reported to illustrate the possibility of error. Dr. E. R. Dumke of Ogden gave a paper on "Surgery of the Thyroid," illustrated with motion pictures of a thyroidectomy.

There was no further business.

Meeting adjourned.

George M. Fister, *Secretary.*

UTAH COUNTY

The regular meeting of the Utah County Medical Society was held April 11 at the Hotel Roberts, Provo.

Following a dinner at 6:30 p. m., Dr. C. J. Pearsall of Salt Lake City, read the paper of the evening, "Common Skin Diseases." The doctor brought out a great many points of a dermatological nature, such as the general practitioner meets in his daily practice. The paper was enjoyed and the society thanks the doctor for his interest in presenting it to them.

* * *

The second meeting of April was held the night of Wednesday, the 25th. After the usual dinner the evening was given up to a round-table discussion of various topics of medical interest. A good attendance was present and the evening was enjoyed.

Arnold E. Robison, *Secretary.*

MISCELLANY

From time to time in this department of California and Western Medicine, appear columns grouped under the following headings: Comment on Current and Recent Articles in this Journal; News; Medical Economics; Readers' Forum; California State Board of Health; and California Board of Medical Examiners. For Book Reviews, see index on the front cover, under Miscellany.

NEWS

University of California Medical School—Appointments, promotions and resignations, effective July 1, 1928.

Appointments—Dr. Chauncey D. Leake has been appointed professor of pharmacology. He was formerly associate professor of pharmacology at the University of Wisconsin and had been connected with that university since 1920. He received the degree of Litt. B. from Princeton University in 1917, M. S. from the University of Wisconsin in 1920, and Ph. D. from Wisconsin, 1923. Doctor Leake spent the fall of 1927 at the Medical School as lecturer in pharmacology.

R. W. Burlingame, M. D., instructor in medicine.

W. Simpson, Ph. D., instructor in physiology.

Robert S. Stone, M. D., instructor in roentgenology.

Allen Owen, M. D., instructor in obstetrics and gynecology.

Promotions—Glanville Y. Rusk from associate professor of pathology to professor of pathology.

Olga Bridgman from associate professor of pediatrics and psychology to professor of pediatrics and psychology.

Herbert W. Allen from associate clinical professor of medicine to clinical professor of medicine.

Florence M. Holsclaw from assistant clinical professor of pediatrics to associate clinical professor of pediatrics.

David M. Greenberg from instructor in biochemistry to assistant professor of biochemistry.

Leopold R. Cerecedo from instructor in biochemistry to assistant professor of biochemistry.

Robert Emmet Allen from instructor in medicine to assistant professor of medicine.

Jean Walker Macfarlane from instructor in psychology and pediatrics to assistant professor of psychology and pediatrics.

Frederick C. Cordes from instructor in ophthalmology to assistant clinical professor of ophthalmology.

Ralph Rabinowitz from instructor in medicine to assistant clinical professor of medicine.

Howard W. Fleming from instructor in surgery to assistant clinical professor of surgery.

Edwin L. Bruck from instructor in medicine to assistant clinical professor of medicine.

George K. Rhodes from instructor in surgery to assistant clinical professor of surgery.

Curle L. Callander from instructor in surgery and topographical anatomy to assistant clinical professor of surgery and topographical anatomy.

Sidney J. Shipman from instructor in medicine to assistant clinical professor of medicine.

Robert S. Sherman from assistant in surgery to instructor in surgery.

Norman N. Epstein from assistant in dermatology to instructor in dermatology.

George N. Hosford from assistant in ophthalmology to instructor in ophthalmology.

T. Eric Reynolds from assistant in pharmacology to instructor in pharmacology.

Theodore L. Althausen from assistant in medicine to instructor in medicine.

A. Lincoln Brown from assistant in surgery to instructor in surgery.

Milton I. Rose from assistant in physiology to instructor in physiology.

Dohrmann C. Pischell from assistant in ophthalmology to instructor in ophthalmology.

Benjamin L. Freedlander from assistant in medicine to instructor in medicine.

Resignations—Rudolf Gahl as assistant professor of biochemistry and bacteriology.

Special Summer Postgraduate Course—The Stanford University Medical School offers a special summer course for graduates of medicine to be given between Monday, July 2, and Saturday, July 14, 1928. This course will consist of a series of forty lectures and demonstrations covering various fields of medicine, surgery, obstetrics, pathology and pharmacology in their clinical aspects. Four sessions will be held on each week-day, excepting Saturday on which there will be two. Opportunities will be given for discussion of problems and for examination of specimens. In general, the purpose of the course is to review, from the practical standpoint, the more important advances in clinical medicine which have been made during recent years. The course may be regarded as complementary with that of the University of California, which ends on Saturday, June 30, so that practitioners so desiring may find it profitable to take both courses.

A detailed program will be sent on request to anyone interested on application to the Dean, Stanford University Medical School, 2398 Sacramento Street, San Francisco.

The American Association for the Study of the Feeble-Minded will hold its annual meeting in Atlantic City, May 31 to June 2 inclusive, with headquarters at Haddon Hall. The meeting this year has been designed to emphasize numerous practical aspects of the problem concerning the feeble-minded, and speakers of national repute will present papers on a variety of these aspects. During the three-day session at Atlantic City the following phases of mental deficiency will be discussed: the sociological aspects, pathological aspects, psychological aspects, administrative aspects of institutions for the care and training of mental defectives, and the delinquency aspect.

Officers of the association are as follows: President, Edward R. Johnstone, who is the director of the Training School at Vineland, New Jersey; vice-president, George E. McPherson, M. D., who is superintendent of the Belchertown State School at Belchertown, Massachusetts; secretary-treasurer, Howard W. Potter, M. D., clinical director of Letchworth Village at Thiells, New York.

Physicians, social workers, psychologists, nurses and others interested in problems associated with the care and training of the feeble-minded are cordially invited to attend this meeting.

Dr. Hamlin Honored at Dinner, April 27, 1928—Veteran Physician of Oakland Tendered Banquet by Citizens—In recognition of his many years' service in the medical profession, Dr. O. D. Hamlin was the guest of honor at a dinner at the Hotel Oakland, April 27. Nearly four hundred invitations were issued

for the affair, according to Dr. William S. Porter, chairman of the committee in charge.

Members of the medical profession, civic and business leaders, city and county officials were among those present.

Speakers for the occasion presented addresses combining to make a health program, dealing with the question of medicine in connection with education, legal questions, public health, crime and crime prevention.

Included among the speakers were former Governor George C. Pardee, who discussed the question of water and health from the standpoint of the East Bay's new municipal water project; Superior Judge Lincoln Church, who discussed the medical profession and its relation to the law; Dr. George H. Kress of Los Angeles, who dealt with medical practice in general, and Judge William Donohue, who discussed "legal medicine."

Dr. W. B. Black, recently appointed head of the Alameda County institutions, was formally presented at the dinner. Following the resignation of Dr. R. H. Broderick as head of the county institutions, Doctor Hamlin carried on the work until a successor, in the person of Doctor Black, was secured. Doctor Hamlin still remains at the head of the Emergency Hospital, in charge of all county emergency work, in addition to being chief of staff at Providence Hospital, official of the state medical society and director in many local enterprises.

READERS FORUM

Much Appreciated Gift from Dr. R. F. Rooney Ex-President C. M. A.

Auburn, California.
April 5, 1928.

Emma W. Pope, M. D.,
Secretary California State Medical Society,
Balboa Building,
San Francisco, California.

Dear Doctor Pope: According to my promise, I sent you today, per insured mail, Vol. I of the *California Journal of Medicine.*

I part with it, as the Scotchman jokes, "wi' deeficulty," as it was the initiatory of medical journalism taking its stand against patent and proprietary advertisements in journals of repute.

Today this fight is won, and our journals are clean; thanks to the efforts of our first editor, dear dead Phil Jones.

Very truly yours,
(Signed) R. F. Rooney.

Note: As the above letter shows, the California Association are deeply indebted to Doctor Rooney of Auburn for the missing first volume of *The California Medical Journal,* which they have endeavored to replace in their files for many years.

TWENTY-FIVE YEARS AGO *

EXCERPTS FROM OUR STATE MEDICAL JOURNAL

Volume 1, No. 8, June, 1903

From some editorial notes:

. . . The Board of Examiners. The state society, by a vote of twenty-six to four, has recorded its approval of the present medical licensing law, and its disapproval of any attempt to modify it by placing the control of the Board of Examiners in any hands other than those of the medical profession . . .

. . . Milk supply supervision. The necessity of medical supervision of the milk supply of cities in the paper read by Dr. George H. Evans at the recent meeting of the State Society at Santa Barbara. . .

. . . Reports from county bodies. Once more the Journal appeals to each and every member of the state society for proper aid and assistance. We want to know and to publish the doings and the transactions of every county medical society in the state. . .

. . . State society annual meeting. The Santa Barbara meeting of the state society was noteworthy for many reasons and in many ways. It was the first meeting under the new plan, whereby all the business of the society is transacted by a house of delegates composed of members duly elected by the affiliated county societies, and it demonstrated the wisdom of this plan beyond all question.

From the official minutes of the legislative branch of the Medical Society of the State of California at its thirty-third annual session held at Potter Hotel, Santa Barbara, April 21–23, 1903:

. . . A communication from the Secretary of State to the effect that the Medical Society of the State of California was incorporated November 10, 1870, was read and ordered placed on file. . .

. . . Article IV, section 2, line 1. "Each county medical society entitled to representation shall have the privilege of sending to the state society one delegate for every additional major fraction of that number; but each affiliated society having less than twenty-five members shall be entitled to one delegate."

. . . Section 13. The committee finds that many defects have developed in the present Constitution and that certain contingencies have not been provided for; with a view to curing these defects a draft constitution and by-laws is herewith submitted. This document is, in effect, the Constitution for state societies offered by the American Medical Association and modified to suit local conditions. The committee recommends that this draft, together with the present Constitution, be placed in the hands of a special committee of five, to be appointed by the incoming president, for the purpose of thoroughly studying the same at its next annual meeting. (Adopted.) Signed, James H. Parkinson, chairman; D. A. Hodghead, J. Henry Barbat, R. F. Rooney; E. Rixford, secretary.

From the report on medical legislation and education, by Henry Gibbons, Jr., A. M., M. D.

. . . Some record should be kept of legislative proceedings relating to medicine; therefore, the following report is presented: Three bills proposing modification of the existing law regulating the practice of medicine in the state of California were introduced at the recent session of the legislature. . .

. . . The primary aim of all these bills seemed to be to transfer the power of appointment of the members of the Board of Examiners from the societies to the Governor.

From the report of medical education and the work of the Board of Medical Examiners, by W. S. Thorne, A. M., M. D.:

. . . Mr. President and Gentlemen: It is meet that we, your authorized and accredited servants, should render at this time an account of our stewardship. . .

. . . The trained and duly licensed practitioner, whose skill and usefulness is attested by entire communities, should not be deprived of his well-earned honors or the fruits of his life work by a trick of the pen or a misconception of the law. . .

. . . On the first of August, 1901, the act for the regulation of the practice of medicine and surgery in the state of California and for the appointment of a board of medical examiners went into effect. Similar laws had been enacted by the various states, and the wisdom and beneficent results of such enactments are attested by a majority of the people. . .

. . . It is of paramount importance that state boards should unite upon a minimum standard of preliminary and medical education and enter upon reciprocal relations, based upon such standards.

* This column aims to mirror the work and aims of colleagues who bore the brunt of state society work some twenty-five years ago. It is hoped that such presentation will be of interest to both old and recent members.

CALIFORNIA BOARD OF MEDICAL EXAMINERS

By C. B. PINKHAM, M. D.
Secretary of the Board

According to reports the United States Post Office Department issued a fraud order against Charles F. Aycock in connection with his association with the Tuberclecide Institute of Los Angeles.

A charge of violation of the California State Medical Act was filed yesterday against H. C. Rhoades, vice-president and general manager of the Medical Service Corporation, by Ben J. Scheinman, head of the District Attorney's Complaint Department. Rhoades is accused of assigning F. E. Keep and O. R. Butler to his Vernon Branch Hospital March 1 last, to care for industrial accident cases, knowing that these men were not licensed physicians. Keep and Butler also are charged with violation of the State Medical Practice Act in complaints issued recently by Deputy District Attorney Ham (Los Angeles *Examiner,* April 15, 1928). According to reports H. C. Rhoades on May 3, 1928, pleaded guilty in Division 1 of the Municipal Court of the City of Los Angeles and was sentenced to serve sixty days in the county jail, suspended for six months on condition of no further violation during that period.

D. J. Dwyer, reported as formerly connected with the Medical Service Corporation in the Vernon Emergency Hospital, Los Angeles, where he was "Dr. Dwyer and where he treated many cases that came in during his hours of duty" was recently charged in Department 3 of the Municipal Court of the City of Los Angeles with violation of Section 17 of the Medical Practice Act.

Exonerated on a murder charge, Dr. Louise Cable today is under court order to pay $10,500 damages for killing 14-year-old Renado Frazzini.—*Los Angeles Record,* May 8, 1928.

S. G. Chew, licensed chiropractor, who is reported as operating a Chinese herb establishment at 1982 Sutter Street, San Francisco, on April 20 pleaded guilty to a violation of the Medical Practice Act. ("News Items," May 1928.)

Chu Poi Bun, reported to be advertising as "Dr." and managing a Chinese herb establishment at 727 Washington Street, San Francisco, was recently arrested on a charge of violation of the Medical Practice Act, and, according to reports, his passport showed his true name to be Chu Wai.

Charles L. Conte, asserted real estate agent and reported in connection with an alleged illegal operation, was found not guilty by a jury in a San Francisco Superior Court on Monday, April 30.

According to report, Galen R. Hickok of "Castle of Mystery" fame, whose naturopathic license was revoked by the board June 29, 1922, following his incarceration at San Quentin, has affiliated himself with the Oskaloosa Baths, and a charge of violation of the Medical Practice Act filed against him was recently dismissed.

Dr. Ottoman Zar-Adusht Hanish, "Master" of the Mazdaznan Cult of Sun Worshipers, which maintains a temple here, is again in a police controversy. . . . Hanish has figured in many sensational cases during the past ten years (San Francisco *Examiner,* May 8, 1928). The files of the Board of Medical Examiners disclose considerable information regarding Hanish, who, according to reports, was formerly a printer at Salt Lake until he became the "Master" of the Sun Worshipers.

Under the heading "The Kirkpatrick Consumption Cure Fake," the *Journal of the American Medical Association* of March 31 gives a brief résumé of the case and amplifies a previous editorial on the alleged cure that George Kirkpatrick, Portland veterinary, had for tuberculosis (*Oregon Daily Journal,* April 4, 1928). It is related that Kirkpatrick is anticipating opening an office in Los Angeles.

The dual life of a leading physician of Mariposa County and a member of the San Quentin road gang in that vicinity is being led by Dr. Ephraim Northcott, serving from ten years to life for the murder of Miss Inez Reed, army nurse, in 1919, during an illegal operation, according to word received in Oakland from Attorney Louis J. Trabucco. There is only one other doctor in the county, it was stated, and many times Doctor Northcott is summoned on cases (San Francisco *Chronicle,* May 7, 1928). In regard to the above it may be stated that Doctor Northcott's license was revoked by the Board of Medical Examiners June 29, 1920, following his conviction and incarceration. The records show that there are five licensed physicians and surgeons in Mariposa County.

According to reports Walter Railsbach pleaded guilty in the Municipal Court of Los Angeles, April 24, 1928, to a violation of the Medical Practice Act and was sentenced to pay a fine of $25 and in default of payment of the fine was sentenced to serve one day in the county jail for each $2.50 of the fine. The records show that on July 16, 1924, Walter Railsbach, then residing in Sierra Madre, pleaded guilty in the Justice Court of Pasadena and paid a $100 fine.

In an article published by the San Francisco *Argonaut* of April 28, 1928, under the caption of "Medical Quackery's Changing Forms," the writer relates: "The state has two interests. . . . In the first place it is concerned to prevent the economic waste represented by the victims of quacks. Second, it owes it to the residents of California to protect them against fraud that endangers their health and lives. It has become an axiom in civilized communities that public health comes second only to public education among the concerns of the state. In line with this principle every modern community takes pains to insure the quality of its water supply, its milk supply, and, as far as possible, its food supply. Equally important with these matters is the quality of the state's medical service and, though California has a set of laws regulating medical practice, it appears that each year these laws are of less avail in stemming the rising tide of quackery." Comment is made on a paper prepared by Dr. Edgar L. Gilcreest, member of the faculty of the University of California, the editorial relating: "We are indebted for a succinct account of what Dr. (Frank) McCoy does not know about medicine. From that gentleman's book 'The Fast Way to Health,' Doctor Gilcreest quotes the following: 'When the diaphragm is contracted the patient exhales the air and poisonous gases and, when it is expanded, air is drawn into the lungs.' Of this revolutionary discovery Doctor Gilcreest remarks: 'Every high school boy knows that just the reverse occurs. One inspires or inhales by contracting the diaphragm.' He then adds: 'Nearly every page of the book is full of such glaring inaccuracies, misstatements and untruths, as also is the daily column which he writes for the newspapers."

Clanton Thomas, referred to in "News Items," May issue, is reported to have pleaded guilty in the San Francisco Superior Court on April 27 and was sentenced to ten days in the county jail, he having been confined nearly a month awaiting trial. He was also placed on probation for one year on condition that he no further violate the terms of the Medical Practice Act.

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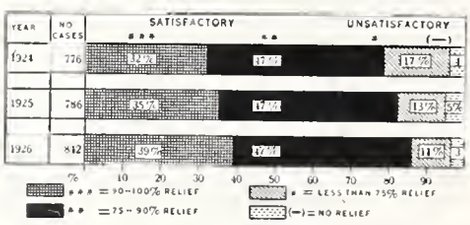

Results of Treatment

Cooke, Vander Veer: Am. J. Med. Sci., Jul. '27, P. 101
(Cooke and Vander Veer used their own pollen extracts)

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To Save Maternal Lives—Vassar Brothers Hospital at Poughkeepsie, New York, has taken an unusual method to accomplish two important ends, according to a recent issue of the *New York Health News*; one the saving of maternal lives and the other the reduction of maternity costs to promote proper maternal and infant care, to the end that maternal lives may be saved.

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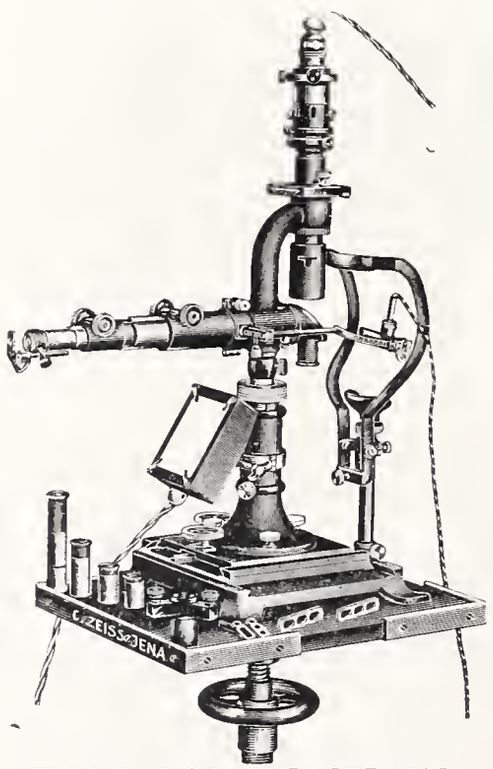

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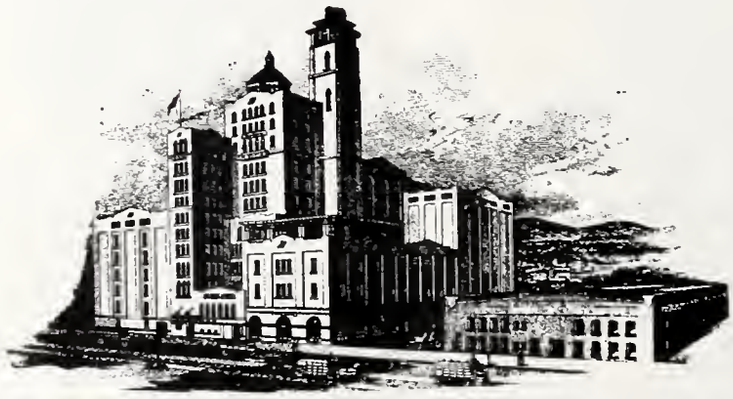

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Clinical Laboratory Service in the United States—Statement by the Council on Medical Education and Hospitals—During the last decade there has been much discussion in medical and laboratory journals and particularly on the platform of medical and laboratory conventions, regarding the status of the clinical laboratories of the country. Especially it was regretted that the practice of clinical pathology, regarded as one of the medical specialties, has fallen into disrepute. The fact was lamented that the laboratory work had fallen into the hands of lay technicians and become the toy of persons who had a purely commercial point of view and very little training for the work. Much disgust and quite a strong note of despair was sounded by those few members of the medical profession who had championed the cause of clinical pathology and had adopted that specialty as a life work.

Many letters were received at the office of the American Medical Association from practitioners of pathology and leaders in medicine regretting the drift toward lay commercialism, and urging that something be done to counteract it. What to do about it was a question. Organizations of chemists were interested because some of their members ran laboratories. Likewise organizations of clinical pathologists, bacteriologists, and of the medical profession were equally interested. Some of these organizations working alone undertook to investigate and to standardize the practice of clinical pathology, hoping to check the drift of that practice into the hands of technicians and restore it to its rightful place as a medical specialty. The efforts of those organizations working singlehanded were of little or no avail except to emphasize the enormity of the task and the necessity for cooperation.

Cooperation Effected in 1923—The necessary cooperation of the laboratory and medical organizations was brought about in 1923 at the annual meeting of the American Medical Association in San Francisco. At that time delegates sent by the American Chemical Society and the American Association of Pathologists and Bacteriologists separately petitioned the American Medical Association to establish some supervision over clinical laboratories. This led to the appointment of three committees representing the American Chemical Society, the American Association of Pathologists and Bacteriologists, and the Council on Medical Education and Hospitals. At a joint meeting of these committees in Chicago early in 1924, after much deliberation, certain basic principles underlying sound laboratory service were agreed upon which stressed especially a qualified bona fide director as the prime essential. The joint committee agreed that this work could best be conducted by the Council on Medical Education and Hospitals.

The first steps were: (*a*) to secure a complete list of laboratories in the country; (*b*) the preparation of a schedule of essentials in an improved clinical laboratory, and (*c*) the preparation of a questionnaire by which the essential facts regarding each laboratory could be obtained. Each of those measures was carried out with the advice and cooperation of fifty or more clinicians and others expert in laboratory work, including the committeemen of the above-named organizations, and by the officers of the American Society of Clinical Pathologists which very early showed an interest and from which the council has received a hearty cooperation.

After being revised and adopted by all parties interested, the questionnaire was mailed to all the laboratories of the country and a most hearty response was received. A complete report of the survey, "Essentials of an Approved Clinical Laboratory," and a preliminary list of laboratories which appeared to be fully complying with those "essentials," were published in the hospital number of the journal for April 3, 1926. The facts as published were submitted

(Continued on Page 850)

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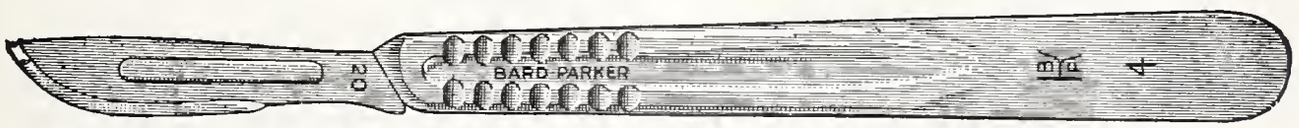

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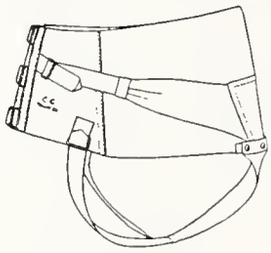

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(Continued from Page 846)

to the House of Delegates of the American Medical Association at the Dallas session in 1926 and approved by that body.

To assist in giving as fair consideration as possible to each application for approval, a strong committee of laboratory experts was formed in every state or section of the country. Those committees aggregate 120 individuals representing, as equally as possible, the cooperating organizations and hence the interests of the laboratory profession. Under the direction of the council, each committeeman makes his investigation and renders his report or advice independently of other committeemen in the same district.

At the present time, of the 314 laboratories that have reported, 151, after careful investigation, have been placed on the approved list and other applications for approval are constantly being received.

The council lends all possible assistance to laboratories whereby they may become eligible for admission to the accepted list. Every laboratory that makes a report and signifies a desire to conform to the requirements, is informed in regard to any deficiencies. The spirit of this movement all the way through is constructive. Anyone who knows the condition of the laboratory field at the time this survey was begun, would not expect very telling or spectacular results to be shown by this time; nevertheless, there are ample reasons for believing that actual improvements are being made: (1) A number of laboratories formerly run by technicians and only nominally under "medical" directors, have come under the ownership and actual control of clinical pathologists of high professional standing and ripe experience; (2) a number of laboratories under the control of technicians have gone out of business; (3) the "Essentials" have been published repeatedly and thus brought to the attention of all persons working in the field of clinical pathology; (4) there is an increased demand for pathologists to man the clinical laboratories of the

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country; (5) the director of the Mayo Foundation says that the salaries offered the pathological graduates of the Foundation are double those offered to other graduates of the Foundation; (6) the feeling of unsteadiness indicated in the discussions of a few years ago has subsided to a considerable degree, and there is a more hopeful attitude on the part of the clinical pathologists themselves.

Future Outlook—The movement is still in its beginning, but a good start has been made. To what extent doctors have actually discontinued sending specimens to unapproved laboratories and are sending them to approved laboratories is not known. The educational results, however, are becoming increasingly evident. In order to secure the best analyses for the benefit of their patients as well as to best conserve the interests of the medical profession, physicians should refuse to have their work done at laboratories conducted under the direction of non-medical individuals. Much depends, also, on the continued hearty support of the various organizations and individuals who operate in the laboratory field. That this is already assured is indicated by the promptness with which laboratories are filling out and returning the form that has recently been mailed out by the Council on Medical Education and Hospitals for a complete and needed resurvey of laboratory service. The resulting data from this survey will be published for the benefit of all. Of course, any laboratories that are not yet on the list will be promptly considered for approval, if they express such a desire.

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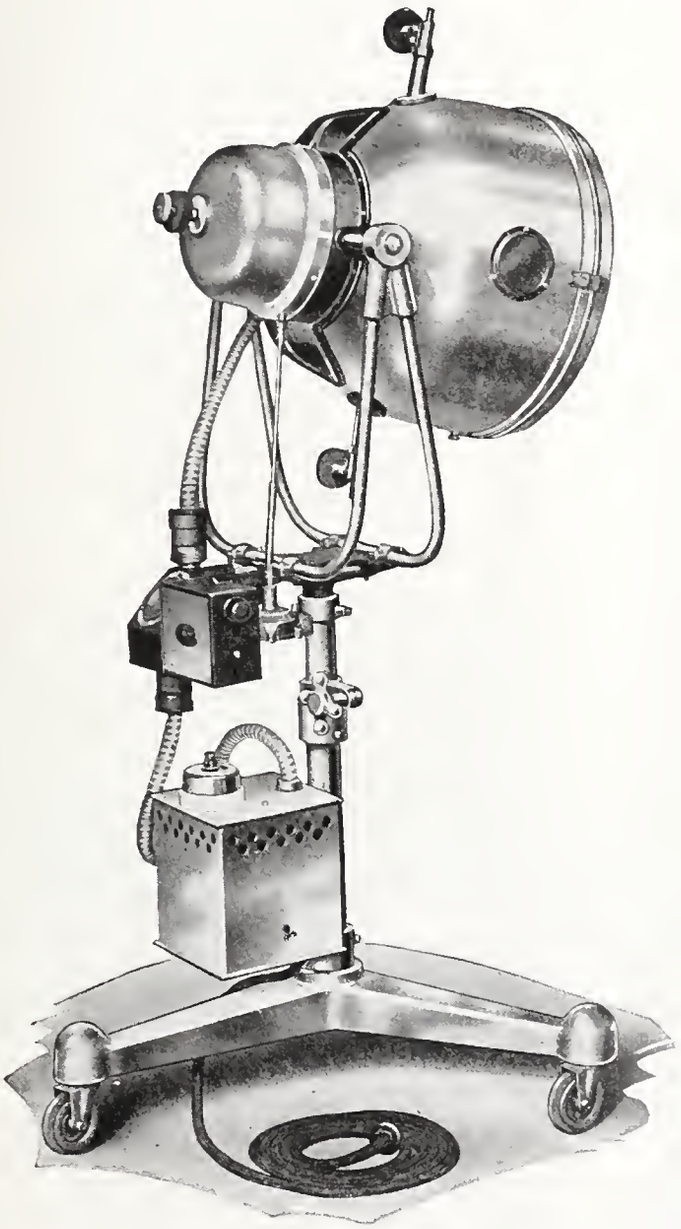

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A Vicious Medical Practice Bill—Osteopathic surgeon generals of the army, navy and public health service are a possibility if a bill (S. 3592) introduced in Congress by Senator Copeland, March 10, becomes a law. The bill provides that "the degrees doctor of medicine and doctor of osteopathy shall be accorded the same rights and privileges under governmental regulations." There is no indication that this mandate is to be limited in its operation to the government of the District of Columbia, although the rest of the bill is so limited. If the bill is enacted, it may be, and no doubt will be, construed to put osteopaths on the same basis as doctors of medicine throughout the entire federal government service.

Both Senator Copeland's present bill and the earlier bill introduced by him at the instance of the Medical Society of the District of Columbia (S.3107) are fundamentally unsound. They undertake to authorize and regulate matters that they do not accurately define. Both bills recognize the practice of osteopathy as something distinct from the practice of medicine and from the practice of drugless healing, but neither gives indication as to what the distinctions are. If the proponents of this legislation do not know the distinctions or fail to state them, how are law enforcement officers and the courts to find out what Congress intends by such legislation?

The recent Copeland bill undertakes not only to regulate the practice of a cult which is undefined even by its own devotees but also to authorize and regulate the practice of an innumerable category of other cults, so-called drugless healers, who under this bill obviously need not be drugless at all. "Drugless healing," according to the bill, is "any system of healing that teaches that disease may be prevented, relieved, or cured without the use of drugs, medicine, or operative surgery." Any five or more adherents of any so-called drugless method of healing may, as a matter of right, demand that an official, permanent board of ex-

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aminers be appointed, if this bill becomes a law, to represent and give dignity to each and every system of "drugless healing" they elect to cover by a petition. The only limitation on the official recognition of any such system is that the petitioners must differentiate it from the unrestricted practice of the healing art; it may include surgery and the use of any and all drugs, if its proponents can find any one element of unrestricted practice that they are willing to forego.

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Limitations of space prevent a discussion of other glaring defects in the pending legislation, such as those relating to the licensing of osteopaths to use drugs and to practice surgery, to the issue of licenses by reciprocity, and to the refusal, suspension and revocation of licenses. What has been said, however,

(Continued on Next Page)

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is probably sufficient to show the undesirability of the enactment of any such legislation. The District of Columbia is the seat of the national capital, but its people have no voice in Congress to influence legislation there. Its legislators are elected by the people of the United States outside of the District of Columbia, and are responsible and responsive to those who elect them. All of this has been forcibly pointed out by the Medical Society of the District of Columbia in its recent appeals to the state associations for the support of its legislative program. All of it applies with equal force now, when the medical profession of the entire country should unite in an appeal to Congress to dissuade it from the enactment of any of the bills that are now pending to regulate the practice of the healing art, of osteopathy, of chiropractic or of naturopathy in the District of Columbia.

The problem of the District of Columbia is the problem of the entire United States. Legislation by Congress is inevitably reflected in legislation in the individual states. Physicians are protecting their own people when they urge their representatives in Congress to defeat such vicious legislation.—*Jour. A. M. A.*

A Federal Cancer Investigation—A thorough investigation of the ways and means whereby the federal government may aid in discovering a successful cure for cancer would be made by the National Academy of Sciences and a report rendered to Congress, according to the terms of a bill, S. 3554, introduced in the Senate by Mr. Neely. For this purpose an appropriation of $100,000 would be authorized.—*New England J. Med.*

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IN THE "Miscellany" section of the September, 1927, issue of CALIFORNIA AND WESTERN MEDICINE, page 398, appeared an article relating to the "collection of fees." Following this publication, numerous orders for printing the series of gum stickers and notices as shown in the article were received by us. We therefore concluded to stock them.

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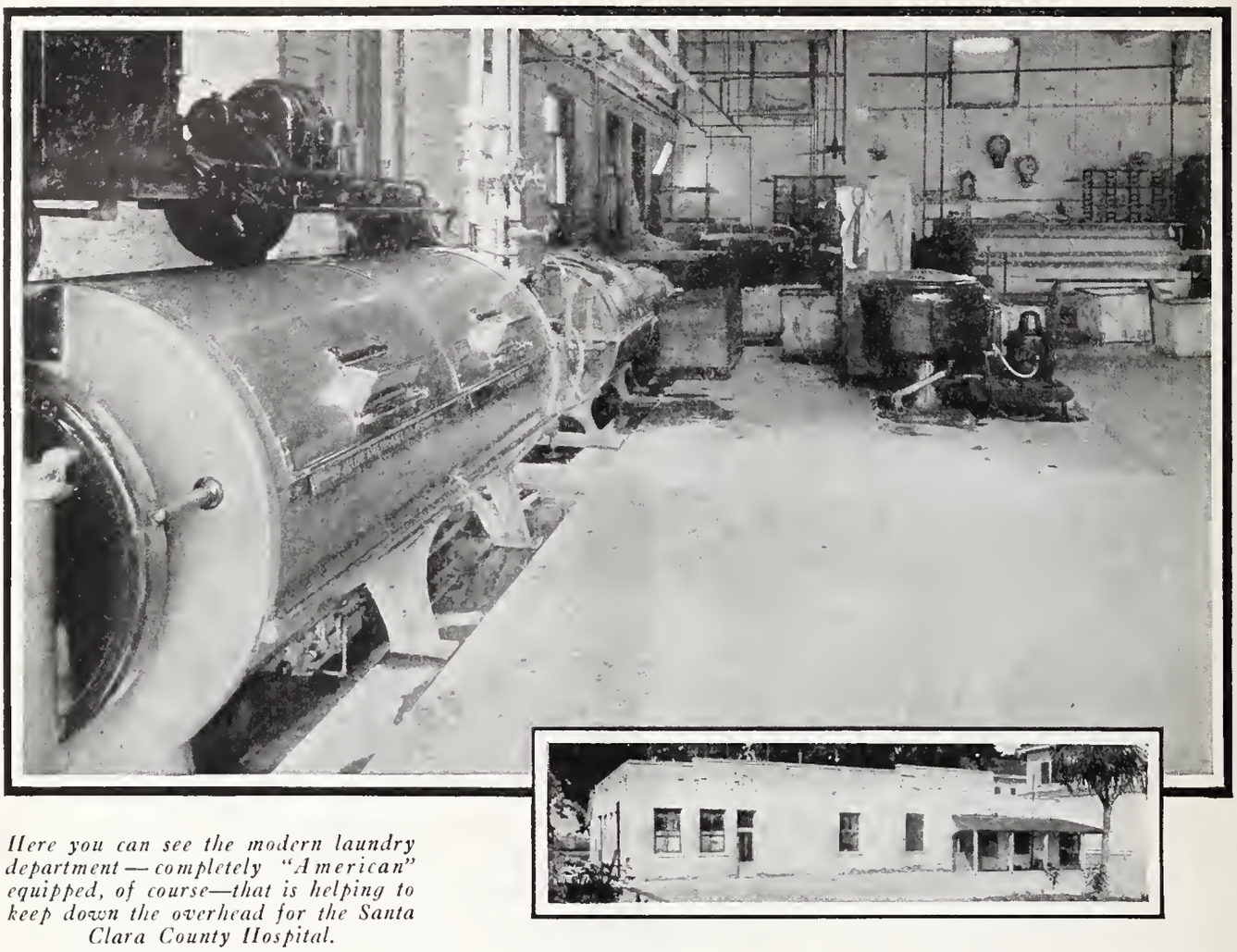

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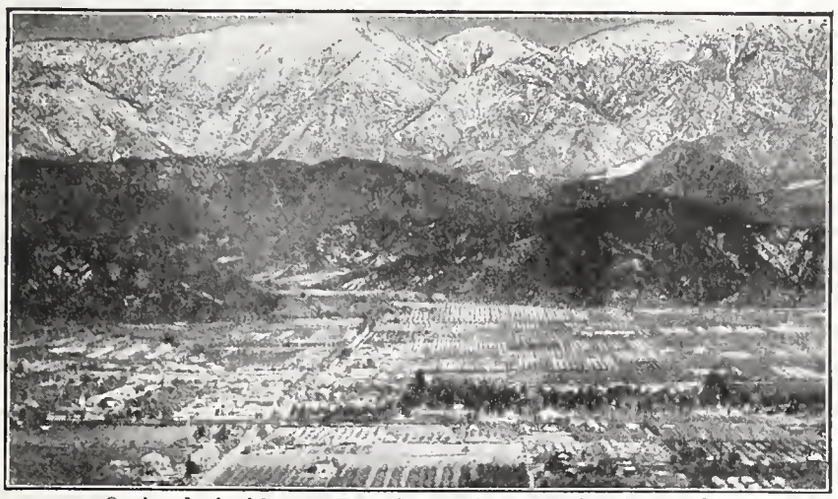

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Traffic Warning in Japan—Perhaps America, with its street traffic problems and its innumerable automobile accidents, might take a leaf out of the book of Japan for the regulation of such matters, says the New York *Times*. There moral suasion is the order of the day, with all possible courtesy. The streets are placarded with conspicuous posters, some of which read as follows: "O automobile! You are beautiful; you are swift; you are powerful. But do not take advantage of your beauty, your speed and your power. Be considerate of your brothers, so inferior to you—the dog, the horse, and the pedestrian. The dog is afraid of your balloon tires, which may so easily crush him. Give him room that he may pass in safety. The horse is frightened at your noise, your smoke, your bad odors. Avoid offending his ears, his eyes, his nostrils. The pedestrian seems to be, of all, of the least account to you. Yet you would do well to have pity on him and spare him; for tomorrow he too may be driving a car."—*Med. Jour. and Rec.*

Survey of the Mentally Deficient—A Massachusetts survey of the mentally deficient seems to show that the feeble-minded most frequently occur among the first born. A report by Doctor Dayton of Boston covering 4040 cases examined, brought out this astonishing fact. This finding so contrary to the generally accepted belief led the *Illinois Medical Journal* to review this report in some detail and states in part as follows:

"The survey was made under a Massachusetts law authorizing the examination of all public school children who are retarded three or four years in their school studies. Fourteen traveling clinics went through the state for this purpose, and Doctor Dayton's report covers the first four thousand examined. The survey shows clearly that a number of generally accepted ideas regarding the deficient children are untrue.—*Journal of Iowa State Medical Society.*

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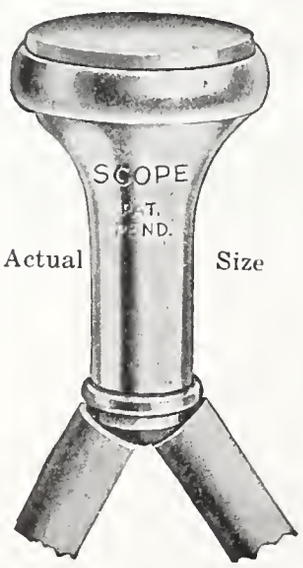

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The Water Treatment of Infantile Paralysis—The medical staff of the New York Hospital for the Ruptured and Crippled is planning for the installation of a swimming pool in which treatment of cases of infantile paralysis may be carried on. Pools have been in operation in other places for this treatment. The exercise of the affected limbs under water is made easier because of the relative specific gravity of water and the human structures which eliminates to some extent the antagonism of weight.

This treatment has been used in a limited way at the Boston Children's Hospital.

The cost of the swimming pool under plans by the Hospital for the Ruptured and Crippled will be about $7000.—*New England J. Med.*

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Recognition for Health Heroes—The survivors of the famous yellow fever experiment in Cuba and the surviving wives of those who have passed on would get special recognition by being placed on the rolls of the War Department, according to bills prepared by the American Association of Medical Progress and introduced in the Senate by Doctor Copeland and in the House by Mr. Wainwright of New York, a former assistant secretary of war.

A bill to change the name of the Ancon Hospital in the Canal Zone to the Gorgas Hospital was adopted in the House on March 5. A monument to General Gorgas in the city of Washington is provided for in a bill introduced in the Senate by the well-known Mr. Helfin. It would cost $50,000.—*New England J. Med.*

Nobel Prize for Medicine, 1927—Dr. Julius Wagner-Jauregg, psychiatrist of Vienna, Austria, has been awarded the 1927 Nobel prize for medicine. Doctor Wagner-Jauregg discovered the malarial treatment of patients suffering from general paralysis—*Mental Hygiene.*

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HAYFEVER

All Sections——NORTH—EAST—SOUTH—WEST——*All Seasons*

Adequately and accurately covered by

ARLCO-POLLEN EXTRACTS

for Diagnosis and Treatment

AN ARLCO-POLLEN COLLECTOR

TREE HAYFEVER

can be accurately identified by skin test with the pollens of locally prevalent trees and thereby differentiated from the "common colds" of early spring.

GRASS HAYFEVER

begins about the time *tree hayfever* ends, *viz.* May 15th, and need not be confused with the earlier appearing and sometimes overlapping tree hayfever.

WEED HAYFEVER

—August to frost—is unrelated to the previously occurring *grass hayfever* and is occasioned, according to the locality, by such late pollinating plants as the Ragweeds — Russian Thistle — Western Water Hemp — Carelessweed — or Sage Brush.

LIST of pollens for any section—any season—with commentary circular discussing the treatment of hayfever by *preseasonal* or *coseasonal* method, with respective schedules of dosage—sent on request.

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California's Crippled Children—Two legislative provisions for relief of crippled children have been enacted. Under the provisions of the restoration bill a state supervisor was appointed who has visited and examined 334 recent polio cases, giving instructions as to physiotherapy treatments, (exercise) which will materially lessen crippling.

Twelve crippled children have been hospitalized under the new law, and they have come from nine different counties—Butte, Kern, Sacramento, Santa Barbara, Santa Clara, San Joaquin, Solano, Lassen, and Ventura.

In five of these cases bills have been paid by the State Department of Public Health as authorized by this law and in each case the county so billed has reimbursed the Revolving Fund.

The remaining cases are still being cared for and charges on four have been filed with supervisors of the respective counties,—*Secretary Report.*

Profitable Absent-Mindedness!—A western physician, driving along a lonely road. picked up a "hitch-hiker," according to a news story. For ten miles he and his companion, a likable young fellow of about twenty-five, discussed everything of mutual interest. Then the doctor reached for his watch. It was gone!

Whipping out his gun, he is alleged to have covered the youth and barked, "Hand over that watch!" The young man did so quickly, with a surprised look—then ran down the road.

The doctor's wife asked him that night, "Didn't you miss your watch today? You left it this morning on the dresser!"—*Nebraska M. J.*

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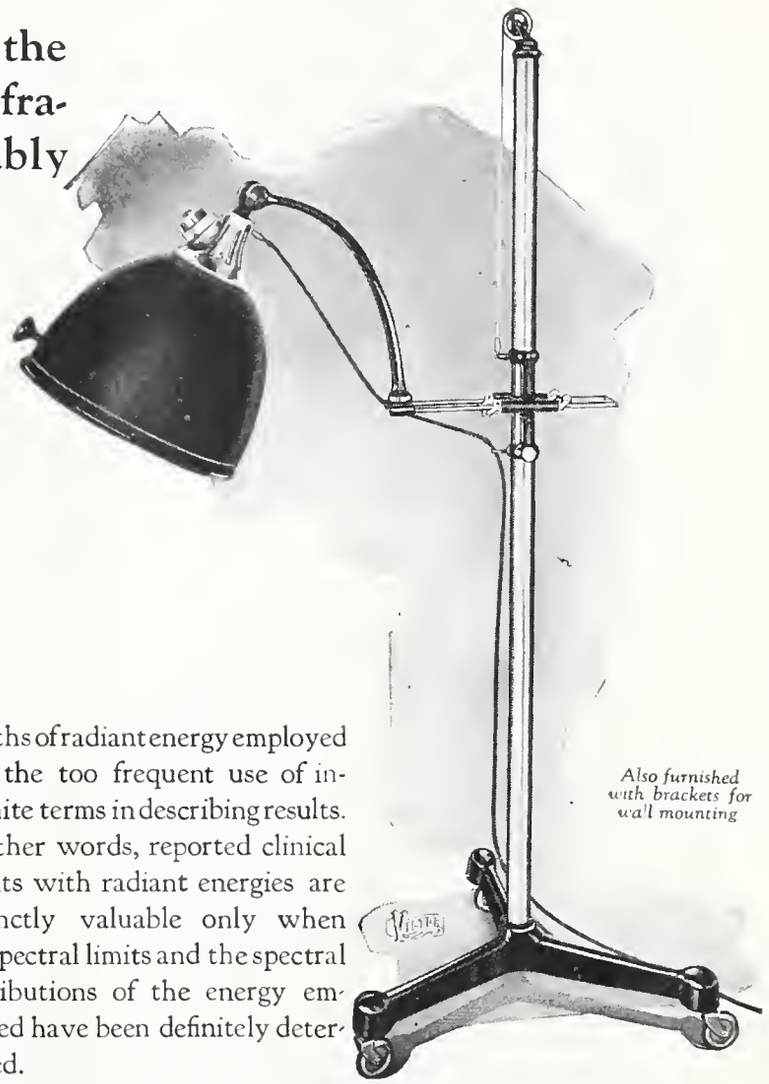

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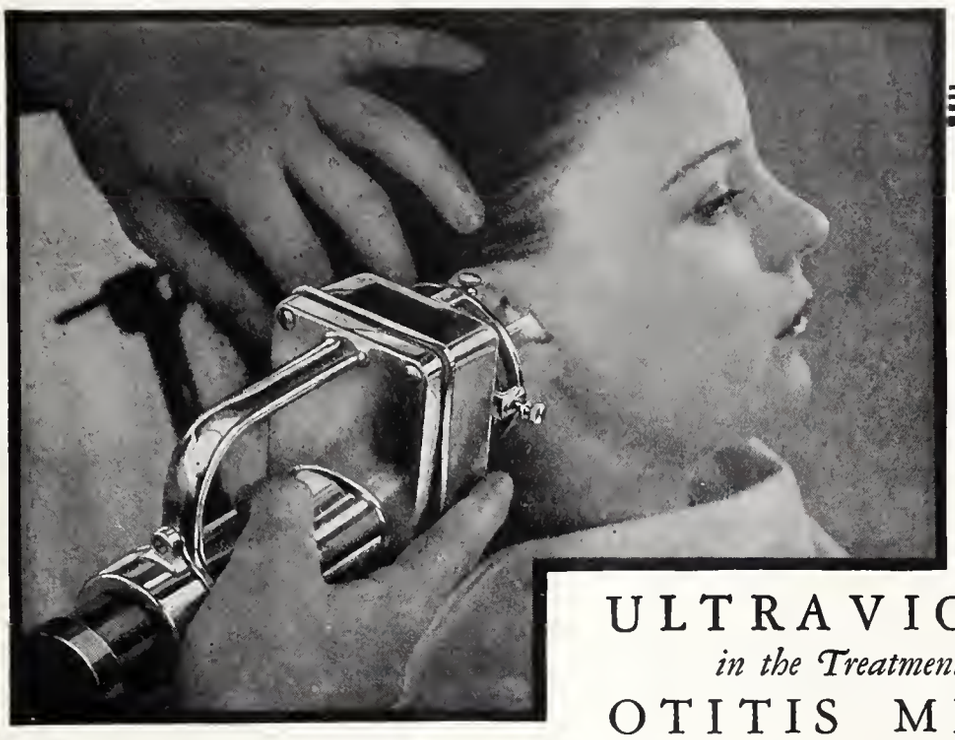

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References: Dr. I. O. Denman, Ear, Nose and Throat Monthly, March 1923 and January 1926. Dr. H. Gerstenberger, Amer. J. of Diseases of Children, Oct. 1922, p. 320. Dr. J. Zahorsky, Mo. State Med. Jour., Feb. 1925. Drs. A. R. Hollender and Maurice H. Cottle, Amer. J. of Phys. Therapy, Apr. 1925, and Eye, Ear, Nose and Throat Monthly, Feb. 1925.

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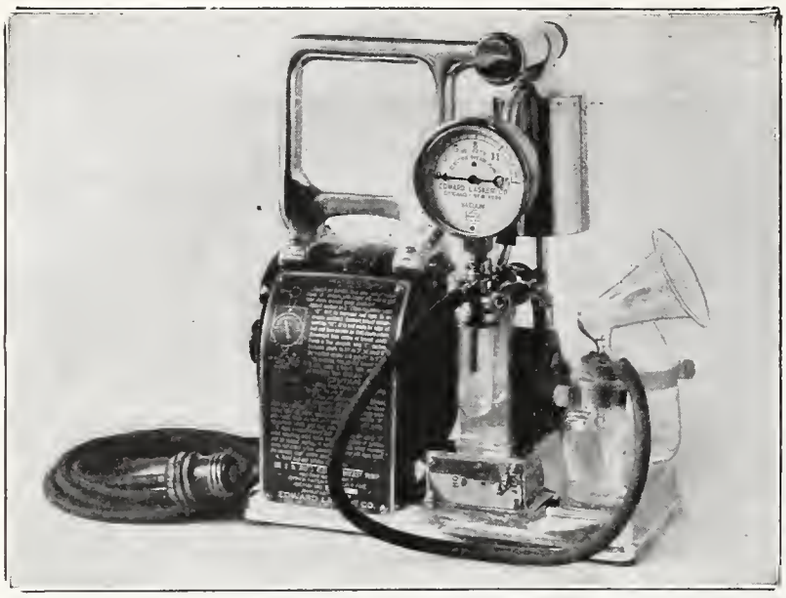

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Partly Cooked Pork Cause of Trichinosis—A group of ten or more individuals living in Contra Costa County suffered from trichinosis recently. One of these cases resulted fatally and most of the individuals who partook of the raw home-made sausage, which was responsible for the outbreak, were very sick. If the pork in these sausages had been thoroughly cooked, none of these cases would have occurred. There is no danger of contracting trichinosis from meat which has been thoroughly cooked. The only danger lies in eating raw pork or pork that is not cooked through. Dr. I. O. Church, health officer of Contra Costa County, and Dr. M. L. Fernandez of Pinole investigated and reported the outbreak.—*Department Public Health.*

B. J. Admits Chiropractic Is Doomed—In addressing a meeting of five hundred chiropractors and sympathizers in Philadelphia, February 26, Mr. B. J. Palmer, "the daddy of chiropractors," made some illuminating remarks. According to the *Pittsburgh Medical Bulletin,* he said: "Fully 80 per cent of the chiropractors in Pennsylvania are practicing medicine, not chiropractic. That is a sorry fact, gentlemen—we are practicing medicine. During the last year I have been in every state in the Union, and this condition exists throughout. My ideals concerning chiropractic were shattered. Chiropractic is doomed. You have drifted so far from the basic principles of chiropractic that you have lost your identity and brought the basic science bill upon your heads. Twenty-eight chiropractic schools have closed recently, and many others will follow. The supreme courts in seven states have handed down legal injunctions during the last eighteen months, whereby these states are lost forever to chiropractic. I warned Ohio not to compromise. They tried to pass a bill engrossing medical principles and practices. I predicted its failure. It lost by 250,000 votes. There has been $250,000 of chiropractic money spent in California in the last year. You cannot defeat the ends of science. The basic science bills are the buckshot which we deserve for trespassing. When chiropractors preach and practice and try to become physicians, then it is justifiable for the medical men to educate the chiropractor. Now beat that argument if you can. That is why we are losing right along. This will probably be the last time you will see me as a chiropractor, as I do not propose to lose my good money in fighting against sound arguments." Incidentally, it is said that the number of students at Mr. Palmer's million-dollar school at Davenport, Iowa, has decreased from 3500 to about 300.—*Federation Bulletin.*

Teamwork of the Nations—A few fine spirits would have national egotisms merge in a larger loyalty to all mankind. They foresee a sort of terrestrial patriotism which will put an end to hate and war between the peoples of the world. To these prophets of a new order nationalism seems an obstacle to the progress of the race. Others, in much larger numbers, see in loyalty a force which grows from the smaller group of family, clan, and locality into the larger circles of province or state and nation. This widening of sympathy is not desertion of the earlier interests; it gives them added meaning and purpose. So too in the international fields of science, art, literature, health, and social welfare, a generous national rivalry plays an even larger part without weakening true patriotic feeling. To contribute to a common world fund of knowledge, skill, and idealism becomes the ambition of each nation. Patriotism gains a nobler significance. Chauvinism is touched with chivalry.

It is the good fortune of the Rockefeller Foundation to have a share in the growth of this teamwork of the nations. By diffusion of knowledge, by visits of leaders and students, by diversified demonstrations of method, by strengthening centers of research and teaching, by ignoring differences of race and creed and polity, the Foundation seeks in some measure to promote its chartered purpose, "the well-being of mankind throughout the world."—*Rockefeller Foundation.*

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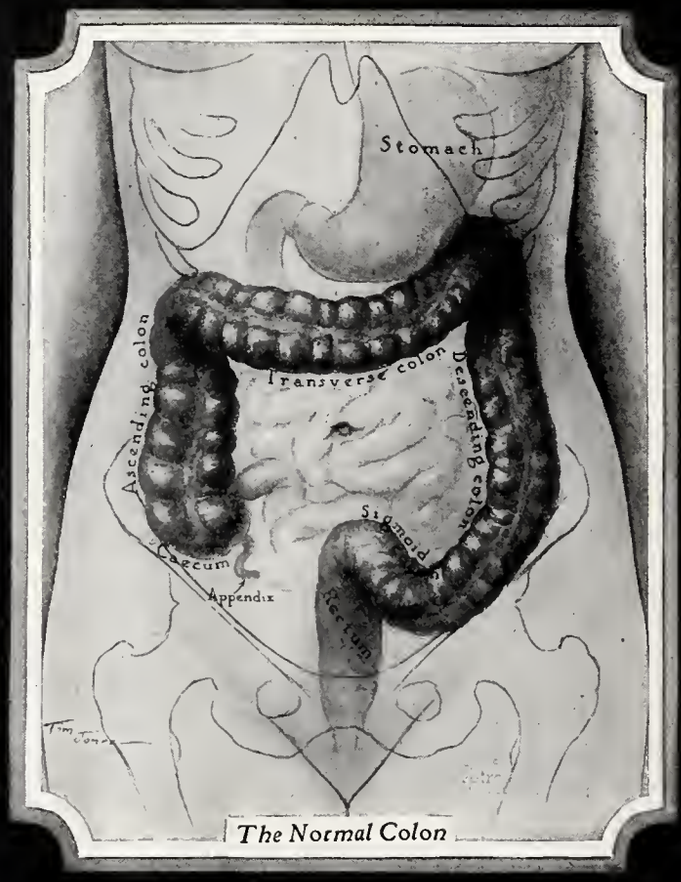

The Normal Colon

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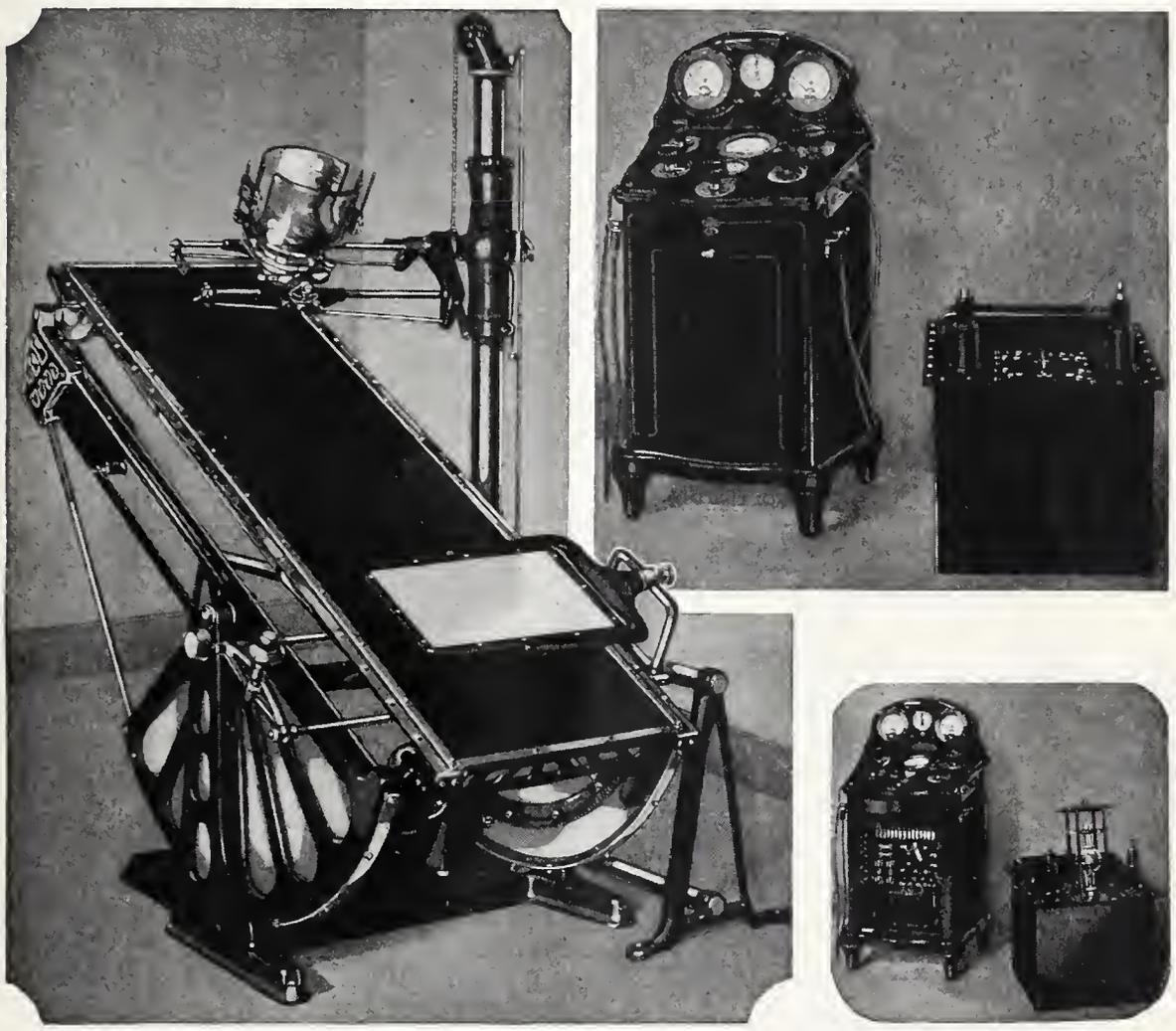

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"Only those clinical laboratories in which the space, equipment, finances, management, personnel and records are such as will insure honest, efficient and accurate work may expect to be listed as approved."

"The housing and equipment should be sufficient to permit all essential technical procedures to be properly carried out."

The Director

"The director of an approved clinical laboratory should be a graduate of an acceptable college or university of recognized standing, indicating proper educational attainments. He shall have specialized in clinical pathology, bacteriology, pathology, chemistry or other allied subjects, for at least three years. He must be a man of good standing in his profession."

"The director shall be on full time, or have definite hours of attendance, devoting the major part of his time to the supervision of the laboratory work."

"The director may make diagnoses only when he is a licensed graduate of medicine, has specialized in clinical pathology for at least three years, is reasonably familiar with the manifestation of disease in the patient, and knows laboratory work sufficiently well to direct and supervise reports."

"The director may have assistants, responsible to him. All their reports, bacteriologic, hematologic, biochemical, serologic and pathologic should be made to the director."

Records

"Indexed records of all examinations should be kept. Every specimen submitted to the laboratory should have appended pertinent clinical data."

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"Publicity of an approved laboratory should be directed only to physicians either through bulletins or through recognized technical journals, and should be limited to statements of fact, as the name, address, telephone number, names and titles of the director, and other responsible personnel, fields of work covered, office hours, directions for sending specimens, etc., and should not contain misleading statements. Only the names of those rendering regular service to the laboratory should appear on letter-heads or other form of publicity."

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" * * There should be no dividing of fees or rebating between the laboratory or its director and any physician, corporate body or group. * * *"*

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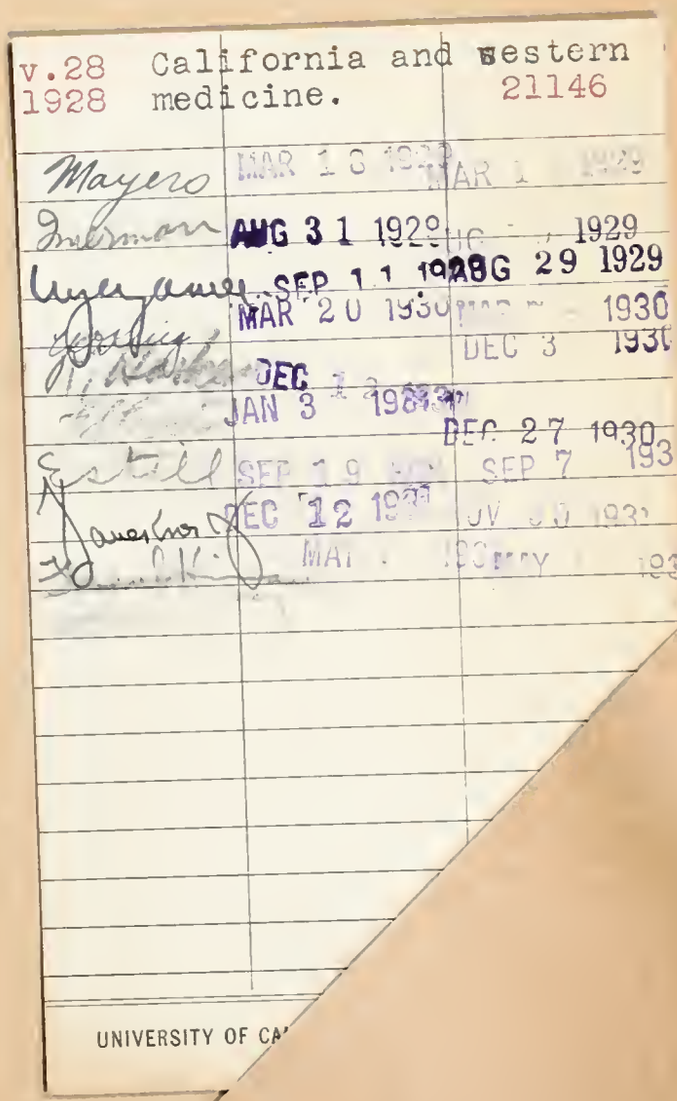
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